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Agribusiness Skills Required By Secondary Vocational Agriculture Students as Perceived by Nebraska Vocational Agriculture Instructors and Agribusiness Managers

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ABSTRACT

Agribusiness Skills Required By Secondary Vocational Agriculture Students as Perceived by Nebraska Vocational Agriculture Instructors and Agribusiness Managers

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The study was conducted to determine what skills are required for a vocational agriculture student to gain employment in a Nebraska agribusiness as perceived by 36 Nebraska vocational agriculture instructors and 180 Nebraska agribusiness managers.

A mailed survey was used to collect data for the survey. The survey return rate for the agribusiness respondents was 78 percent and the return rate for the vocational agriculture instructors was 86 percent. The Likert Method of Summated Ratings was used to rate 40 agribusiness skills on a scale of 1 to 9. Means, standard deviations and analysis of variance were computed for each skill item. The Anova and Tukey post hoc test revealed differences among specific groups for both demographic and skill data. A Cronbach Alpha Reliability Coefficient was calculated on the entire instrument, yielding an r-value of (.9398).

The agribusiness respondents identified seven skills as required for employment in their agribusiness. Thirty skills were observed to have a significant difference at the .01 level between the perceptions of skills required for employment in an agribusiness by vocational agriculture instructors and agribusiness respondents.

Customer relation skills and communication skills were identified as the most required skills for employment in an agribusiness. Agribusiness skills were most often required in occupations such as agricultural sales and service, agricultural supplies, agricultural finance and horticulture. Respondents representing agricultural supplies most often rated enrollment in vocational agriculture as "always" or "sometimes" required for employment in their agribusiness.

Agribusiness managers do not require as many agribusiness skills to gain employment as perceived by the vocational agriculture instructors. Agribusiness managers are aware of the vocational agriculture program but they do not rely on the program as a source for new employees.

Agribusiness Skills Required By Secondary Vocational Agriculture Students as Perceived by Nebraska Vocational Agriculture Instructors and Agribusiness Managers

by

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INTRODUCTION

The Smith-Hughes Act of 1917 was designed for vocational agriculture programs to provide systematic programs of instruction for the purpose of preparing individuals for useful employment. This Act provided for cooperation between the states to promote education in agriculture, home economics, trade and industry (Malpiedi,1987).

According to Scarborough (1987) establishment in farming as the guiding purpose for programs in vocational agriculture was never realistic in theory or practice. He observed that vocational agriculture programs must provide students the opportunity to review career choices, develop personal skills and develop decision making skills. Scarborough concluded that one of the most effective methods of incorporating change is by the implementation and development of curriculum materials to keep current vocational agriculture instructors up-to-date. Scarborough indicates that these efforts improve the effectiveness of local programs.

The need for instruction in agribusiness was identified as early as the 1960's. Yet today the definition of "agribusiness" remains vague. Quality materials for agribusiness instruction are yet to be developed and implemented in vocational agriculture programs in Nebraska.

The Vocational Education Act of 1963 passed by the United States Congress predicted and promoted changes needed for vocational education programs in agriculture. The 1963 act encouraged schools to offer vocational instruction for any occupation in agriculture/agribusiness for which their was a need. This was a drastic change from the types of

programs in production agriculture which were receiving federal financial support prior to 1963.

Carl Gerhardt (1986), Senior Vice-President of Alfa Laval Inc. in Kansas City stated that vocational agriculture programs in secondary schools are basically geared to train for production agriculture as are most college of agriculture curricula. Gerhardt speculated that though production training must continue, the question must be asked; where do we train prospective farmers and agricultural businessmen how to thrive/survive in the business world? The answer to this question is critical if we accept the premise that vocational agriculture teachers must move their primary teaching orientation from production of food and fiber to agribusiness management.

The quality of education in the United States was questioned by the Nation at Risk report (Altbach,1985). Since that time school reform has been at the top of the nation's educational agenda. Many states have made extensive changes in high school graduation requirements which tend to limit the students opportunity to take vocational classes.

Two of the more important recommendations suggested by the Nation at Risk report were that schools must stress more science and math and move away from the "frills" that seem to have little relevance to preparing for global economic competition. The study also pointed out that more school curriculum should be related to the job market and the perceived needs of industry (idem.).

In January of 1984 a National Commission on Secondary Vocational Education was formed to address some of the issues facing vocational education in a publication entitled Unfinished Agenda (Taylor,1984). The

study points out that vocational education provides for student development in five areas. These include: (page 3)

1. personal skills and attitudes
2. communication, computational and technological literacy
3 employability skills
4. broad and specific occupational skills and knowledge
5. foundations for career planning and lifelong learning

Taylor (1984) commented that although more academics may be the best preparation for college, it may not be the best preparation for life. The response by the states to improve the quality of education shows merit but it ignores the differences in interests and abilities, and it ignores the needs of those high school students who do not plan to go to college. Such a narrow focus ignores the fact that 80% of the jobs in America do not require a college degree and most students will not obtain one (Taylor,p.1).

According to the 1984 Gallop Poll of the Public Attitude toward Public Schools, the majority of the people believe that vocational education courses (outranked only by math and English) should be required for students not planning to go to college. However the national movement toward more and specific academic requirements limits students access to vocational education.

In the past five years vocational agriculture has been affected by a depressed agricultural economy and decreased student enrollment in programs. Reductions in federal and state funding have caused many school districts to evaluate programs to determine if vocational agriculture is necessary and is meeting the student's needs.

According to the Nebraska State Department of Education (Ward,1986), vocational agriculture programs in Nebraska have dropped in number from

140 departments in (1980-81) to 128 departments in (1986-87). It has also been noted that the total number of agriculture instructors has dropped from 153 instructors in (1980-81) to 133 instructors in the current year (1986-87).

F.B. Daniel (1986) a member of the Minnesota State Board of Vocational Technical Education and an employee of the Minnesota Farmers Union stated, "Agriculture in America has never been so severly tried than it is today. Agricultural Education, as an integral part of the industry, is equally challenged. There has never been a time when probing, projecting and leading on the part of agricultural leaders was more necessary than in the years of 1985 and 1986. Business as usual right now could insure that we will not be around as agricultural educators in the 1990's."

According to the Encyclopedia of Careers and Vocational Guidance (Hopke,1984), agribusiness technology is a fairly recent outgrowth of the application of science, technology, and business management techniques to the fields of agriculture. The business side of agribusiness has profited from the shift by farmers from consuming the goods that they grew to selling those foods. This shift has created the need for transportation, processing, storage, selling and marketing. This shift has been well under way since the early 1900's; however new forms of technology and new business strategies have expanded possibilities and continue to create new opportunities and new markets for people involved in processing, distribution, and the selling of farm products. The agribusiness field has grown so rapidly that it is virtually a new field of endeavor for every generation.

The changing structure of American agriculture and the expansion of agribusiness has created a demand for accurate up-to-date information about occupations in agriculture. Baker (1985) of the Department of Labor stated that even though agribusiness is the number one industry in Nebraska, an adequate means has not been determined to detect job skills needed or even the type of jobs available in Nebraska. The term agribusiness has not been specifically identified enough to collect adequate information for determining employment opportunities or employment trends. Reliable data on occupations requiring agricultural competencies across the industry are crucial for program planning purposes.

Gerhardt (1986) expressed a need for instruction in business skills. "We must have farmers who are as astute in business management and finance as they are in the production of food and fiber. Said another way, agriculture must have an "excellence movement" to bring modern business management practices into the 1980's and 1990's in the same way that production technology occurred in the 1950's, 1960's, and 1970's. No where in the American industrial society has production excellence advanced to the degree that it has in agriculture. However the American farmer still has one of the lowest returns on investments of any industry in the nation.

In January of 1984 a statewide study was conducted by the University of Nebraska entitled "Agriculture 2001". Roberts et.al (1984) stated that the curriculum for students in agriculture should be continually evaluated and increased emphasis should be given to courses in business management, communication skills, the sciences, domestic and

international marketing and the quality of life. He went on to say, "The quality and value of our output is usually governed by the effort of our inputs".

According to Bell (1986) an effort in Nebraska is being made to make agribusiness instruction in vocational agriculture up-to-date and relevant to the needs of secondary education students. An eight day workshop for vocational agriculture instructors was designed to introduce the instructors to the content of the Employment in Agriculture instructional materials developed by the Mid America Vocational Curriculum Consortium (MAVCC). In addition to the MAVCC curriculum, instructors developed a plan to integrate the curriculum into their existing vocational agriculture programs. The instructors were also allowed to apply the agribusiness skills learned in the workshop to actual internship experience in business situations during the five afternoons of the week long workshop. The immediate results of this workshop have been the development of formal plans by the instructors to implement agribusiness into their vocational programs and the renewed excitement of teaching agribusiness skills to meet the needs of the students.

Bell suggested that the workshops identified three positive results. The inservice experience should enhance the motivational activities used for classroom instruction, teachers can better relate to job activities of students placed in supervised occupational experience programs, and self-confidence should be improved in the instructors ability to provide agribusiness instruction.

It has become our responsibility as agricultural educators to

determine agribusiness needs of the present and the future to revitalize agricultural education for the years ahead. Matteson (1974) stressed, "The development of curriculum which prepared students to enter the occupations of their choices is a major reason for the existence of vocational educators at all levels.... The secondary and postsecondary vocational educators are ultimately the ones responsible for the development of appropriate and adequate vocational education curriculum."

The need for implementation and improvement of agribusiness instruction has been identified in vocational agriculture programs in Nebraska. Results of this study will provide a better understanding of the usefulness of current agribusiness instructional materials and will provide assistance in identifying the needs of the agribusiness industry and of students when developing instructional materials for the future.

Purpose of the Study

The purpose of this study is to identify agribusiness skills which are required by a student for entry level employment in Nebraska agribusinesses as perceived by Nebraska vocational agriculture instructors and agribusiness managers. The results of this study will be used to develop and update curriculum materials for students in vocational agriculture and agribusiness programs.

Specific Objectives

The specific objectives of this study were to:

1. Identify demographic information from various Nebraska agribusinesses and vocational agriculture instructors, including employment opportunities and requirements for employment.

2. Identify the skills required for employment in an agribusiness as perceived by selected Nebraska agribusiness managers and vocational agriculture instructors.

3. Determine differences between skills required for employment in an agribusiness as perceived by Nebraska vocational agriculture instructors and Nebraska agribusiness managers.

4. Determine differences between skills required for employment in each of seven selected types of agribusiness as perceived by Nebraska agribusiness managers.

5. Determine agribusiness skills required for employment based on the agribusiness respondent's level of education.

6. Determine the level of education required for employees hired by Nebraska agribusiness respondents.

7. Determine the level of education required for employees in each of seven agribusiness areas.

PROBLEM STATEMENT

The employment skills required for a vocational agriculture student to gain employment in a Nebraska agribusiness are not known and are needed for curriculum development in Nebraska.

NULL HYPOTHESIS

The following Null Hypothesis will be tested in the analysis of the study:

1. There is no significant difference in the skills required for employment in an agribusiness as perceived by Nebraska agribusiness managers and vocational agriculture instructors.
2. There is no significant difference in the skills required for employment in an agribusiness based on the agribusiness respondent's level of education.
3. There is no significant difference in the skills required for employment in each of seven occupational areas of agriculture as perceived by Nebraska agribusiness managers.

TERMS AND DEFINITIONS

Vocational Education - "organized education programs which are directly related to the preparation of individuals for paid or unpaid employment, in such fields as agriculture, business occupations, home economics, health occupations, etc. , or for additional preparation for a career requiring other than a baccalaureate or advanced degree and vocational student organization activities as an integral part of the program . . " (Carl Perkins Vocational Education Act of 1984-PL 98-524).

Agribusiness - A profit motivated enterprise which involves providing supplies and or services needed by those engaged in agricultural production, and/or processing, marketing, and distribution of the agricultural materials and consumer products.

Agricultural Education - A term to describe the broad instructional areas of vocational education in agriculture. Also refers to the curriculum, in a college or university, structured primarily to prepare and assist teachers (professional educators) of agriculture.

Agricultural Occupation - An occupation that requires agricultural knowledge and skills. The primary instructional areas, which also serve to classify agricultural occupations, are: agricultural supplies and services, agricultural mechanics, agricultural production, agricultural product processing and marketing, ornamental horticulture, agricultural resources and forestry.

Agriculture - the broad industry engaged in the production of plants and animals for food and fiber, and the provision of agricultural supplies and services, and the processing, marketing, and distribution of

agricultural products.

Competency Based Curriculum - A program composed of the essential task elements of a specific occupation. Performance objectives and content are identified by the analytical process. The students accomplishment of an objective, under prescribed conditions, complying with designated standards, is accepted as indication of mastery of the various elements of the occupation.

Curriculum - The total instructional experiences and programs designed to cover the concepts in a designated field or vocation. It may refer also to the total program of studies offered in an educational institution.

Agribusiness and Agricultural Production - A summary of groups of instructional programs that prepare individuals to apply scientific knowledge and methods, and technical skills in support of agribusiness and agricultural activities concerned with the production and propagation of crops and animals, supplies and services, mechanics, product processing, marketing, and horticulture.

Agricultural Business Management - A group of instructional programs that prepare individuals to apply the economic and business principles involved in the organization, operation, and management of farm and agricultural business.

Agricultural Mechanics - A group of instructional programs that prepare individuals to select, operate, maintain, service, sell, and use agricultural/agribusiness power units, machinery, equipment, structures and utilities. Includes instruction in agricultural power units, the planning and selection of materials for the construction of agricultural

facilities, and the mechanical practices associated with irrigation, drainage, runoff, water conservation and erosion control.

Agricultural Production - A group of instructional programs that prepare individuals in planning and economically using facilities, land, water, machinery, chemicals, finance, and labor in the production of plant and animal products.

Agricultural Products and Processing - A group of instructional programs that prepare individuals to process food and non-food products and to inspect those products from preparation to marketing. Includes instruction in the characteristics and properties in agricultural products and of agriculture related processing techniques and skills. (includes quality control and mechanical operations involved in marking, grading, inspecting, packaging, storing and marketing).

Agricultural Services and Supplies - A group of instructional programs that prepare individuals to sell supplies for agricultural production; provide agricultural services, and purchase, grade, store, market and transport agricultural products. Includes instruction in animal breeding, horseshoeing, small animal services, and animal hospital care services.

Horticulture - A group of instructional programs that prepare individuals to produce, process and market plants, shrubs and trees used principally for ornamental, recreational and aesthetic purposes. And to establish, maintain and manage horticultural enterprises such as arboriculture, floriculture, greenhouse operation and management, and turf management. Includes instruction in machinery and equipment necessary for each horticulture enterprise.

REVIEW OF LITERATURE

On February 23, 1917 the Senate and the House of Representatives passed the Smith-Hughes Act establishing vocational education in agriculture. The act annually appropriated seven million dollars for the purpose of assisting the states in paying the salaries of teachers, supervisors and directors of agricultural subjects and for preparation of teachers (Hillison, 1978). Section seven of the act stated that money should also be provided for use by the Federal Board of Vocational Education to administer the act and to conduct studies, investigations and reports to aid in the organization and conduct of vocational education.

In order for a school to qualify for funding under the Smith-Hughes Act, several conditions had to be met (Malpiedi, 1987). Vocational agriculture instruction and supervised practice must be offered by the school and taught by a vocational agriculture instructor to students 14 years of age or older. Each state must designate a state board to administer the act, provide a network of supervisors and teacher trainers, and submit a yearly plan to be approved by the Federal Board of Vocational Education.

The Smith-Hughes Act was primarily geared to prepare students for a career in farming. Scarborough (1987) suggested that to prepare a student for a specific career objective is unrealistic. He suggested that vocational agriculture programs must provide students the opportunity to review career choices, develop personal skills and develop decision making skills. Vocational agriculture must also provide

challenging supervised practice programs related to the classwork and geared to the needs of the individual student.

The Vocational Education Act of 1963 officially changed the responsibilities of vocational agriculture from those reported in 1917. McClay (1978) indicated that the 1963 Act encouraged schools to offer vocational instruction for any occupation in agriculture or agribusiness where there was a need. This was a dramatic change from the instructional programs in production agriculture and farming which received financial support prior to 1963.

Three years ago the Carl Perkins Act was implemented to provide financial assistance for expansion of existing and development of new vocational agriculture programs. The Carl Perkins Vocational Education Act of 1984 currently provides funds for the creation or expansion of programs to train students in skilled occupations to revitalize businesses and industry in a state or community (Public Law 98-524 p.2455).

According to Conrads (1984), General Service Manager of Deere and Company, the mission and function of vocational training should be to educate and train students and adults in the acquisition of skills that are desired by business and industry. These skills must be at a level that enables the graduated vocational education student to successfully obtain and hold a job.

Recommendations by Taylor (1984) in the report entitled the Unfinished Agenda suggested that vocational education should expand the critical role of business, labor and the community in vocational

education. Taylor also stated that schools must involve business, labor and the community in such vital areas as teacher development, curriculum update, evaluation, career education and student employability. Taylor went on to say that business and labor must seek opportunities to work with schools to improve classroom instruction.

Weisburg (1983) stated that the three new missions of vocational programs must be to first improve the quality of their basic skill offerings, knowing that general literacy skills are more likely than any other factor to influence success in the labor market. Secondly, that high schools improve their job counseling and placement services, and third, provide more opportunity for structured supervised work experience, especially for the non-college bound student.

The Encyclopedia of Careers and Vocational Guidance (Hopke,1984) provided some historical aspects of agribusiness instruction. Agribusiness technology is a outgrowth of the application of science, technology, and business management in the field of agriculture. In the 18th century there were limited agricultural businesses serving farms by providing goods or services or marketing their products. The typical farm family raised its own food and what was produced was consumed by the family itself.

Agricultural businesses began to appear in greater numbers in the middle of the 19th and early 20th centuries by supplying farmers with machinery and equipment. The application of scientific knowledge on the problems of agriculture began to reach significant levels in the late 19th century. Development in seed and feed started out slowly and it was not until after World War II that the scientific feeding of livestock led

to a successful commercial feed industry. Using genetic research to develop varieties of seeds, especially for corn, caught on more quickly. Today the seed industry has been successfully established to produce seeds for a variety of crops.

The business side of agriculture as discussed by Hopke (1984) profited from the shift by farmers from consuming the goods that they grew to selling those foods. This shift created the need for transportation, processing, storage, selling and marketing. New forms of technology and new business strategies expanded possibilities and continued to create new opportunities and new markets for people involved in processing, distribution, and the marketing of farm products. The whole area of agribusiness has grown so rapidly that it was virtually a new field of endeavor for every generation. In fact, the development of the agribusiness field is so new that the profession of the agribusiness technician is relatively unknown outside the agricultural community.

The University of Nebraska Vocational Education Terminology Dictionary (1980) defines agribusiness as: A profit motivated enterprise which involves providing supplies and or services needed by those engaged in agricultural production and/or processing, marketing and distribution of the agricultural materials and consumer products.

According to the Nebraska Crop and Livestock Reporting Service (Schroeder,1985) the State of Nebraska ranks 1st in alfalfa meal production, 2nd in cattle production, 3rd in corn production, 3rd in sorghum production, 2nd in commercial livestock slaughter, and 4th in land used for farms and or ranches. Nebraska provides a major source of

food for the nation and the world, exporting $5 billion in products annually.

The Nebraska Job Prospects Report for 1983-88 (1985) indicated that the employment outlook for Nebraska shows a decrease of employment in agriculture from an employment figure of 10% in 1983 to a predicted 7% in 1988. Although this appears to be a small percentage difference, it measures a large percentage of people actually employed in agriculture. The nine areas of employment in Nebraska industry include mining, construction, manufacturing, transportation, trade, finance, services, government and agriculture. Service is the only industry which showed an increase of three percent while agricultural employment was the only industry which dropped three percentage points.

The distribution of farm employment identified in Nebraska Job Prospects (Baker,1985) for farm labor is a negative 11% for the years of 1980-1988. Employment for agricultural production of crops showed a negative 20% change in employment and agricultural production in livestock showed a negative 20% change. The brighter side to the story is that employment will increase in the following areas: farm and garden machinery shows an increase of 14%, meat product processing will increase 14%, dairy product processing will increase 14%, preserved fruits and vegetable processing will increase 14%, grain mill products will increase 14%, agricultural chemical sales will increase 12%, machinery equipment and supplies will increase 11%, raw farm product processing will increase 11%, and employment in lawn and garden supplies will increase 12%. The list of job opportunities in agricultural services and processing in Nebraska are to numerous to mention, but as can be observed

the job opportunities are in agribusiness, not in production agriculture.

Baker (1985) of the Department of Labor stated that even though agribusiness is the number one industry in Nebraska, an adequate means has not been determined to detect job skills needed or even the type of jobs available in Nebraska. The term agribusiness has not been specifically identified enough to collect adequate information for determining employment opportunities or employment trends.

McClay (1978) stated that an observer does not often find categories in the existing United States census which identifies the data listing the thousands of agricultural and agribusiness workers fitting the appropriate occupational titles. Present census procedures tend to include these workers in broad employment categories in which their identity to agriculture or agribusiness is lost. Casual observers tend to conclude that agriculture/agribusiness is a dying field of employment, which is not a true observation.

Sherman (1971), stated that the most spectacular enrollment increases in post secondary occupational education occurred in agriculture and natural resources during the years 1966-1970. These increases in enrollment occurred in the face of published data indicating that the number of agricultural job opportunities would continue to decrease. Even though the data suggested this decrease, students who completed agricultural studies were still in demand.

Sherman also advised that statistics can be somewhat misleading. There is decreasing demand for unskilled labor on the farm, but the demand for mechanization of agricultural production has grown. Agriculture has shifted from a labor intensive industry to a capital

intensive industry. The image of the farmer has evolved into that of a competent, technically-trained manager. Sherman stated that traditional operations have been changed completely, and require an increasing number of middle management employees who have technical training or are management orientated.

The Encyclopedia of Careers and Vocational Guidance (Hopke 1984) uses the term " agribusiness technician " to describe people who apply their background and training in business, economics, and agriculture to the organization, operation, and management of farms and agricultural businesses. Agribusiness technicians work in a wide variety of businesses concerned with the production and propagation of plants and animals with agricultural supplies and services, and with the processing and marketing of agricultural products. Agribusiness technicians may be involved with providing farmers with financial credit, power, fuel, transportation services, and other farm supplies and services. They may also help farmers arrange contracts for the marketing and processing of their products.

The Encyclopedia of Careers and Vocational Guidance (Hopke 1984) further suggested that successful agribusiness technicians must have the following qualities. First they must be able to work well with people. This includes the ability to delegate responsibility and to establish friendly relations with farmers, laborers, and other people with whom they are in contact.

Second, agricultural technicians must be able to analyze problems of management and make sound decisions based on existing facts. Third, they must be able to communicate well with others. Technicians should be able

to write and present reports, offer comments clearly, and when necessary train other workers for a particular job.

According to Williams (1971) agribusiness curriculum and instruction material for entry level employment can be provided in the areas of agricultural supplies and service, agricultural mechanics, agricultural production, ornamental horticulture, and agricultural resources.

Williams went on to say that the need for trained employees in non-farm agricultural occupations has been well documented, and that the competencies needed for entry into various agribusiness occupations was identified during the decade of the 1960's. Such research findings have been used to some extent in developing and expanding vocational programs in agriculture, but in general, the implementation of innovative secondary educational programs to prepare youth for entry level in agribusiness occupations has lagged behind that of the traditional production agriculture curriculum. Williams concluded that the lag may be partially due to the lack of curriculum guides and relevant teaching materials. Secondary teachers must search for compiled ideas they can use in developing and revising agricultural curricula, to include learning experiences that will prepare students for employment in agribusiness occupations after graduation, or to expedite transition into a postsecondary agricultural curriculum for advance training.

The Mid America Vocational Curiculum Consortium (Hilgenberg,1984) introduced the "Employment in Agriculture" curriculum guide. The purpose of the guide is to provide instructional materials to assist the vocational agriculture instructor in preparing students for employment in

an agribusiness. Writers and representatives from eleven member states brought with them technical expertise and experience related to classroom and agribusiness industry. Agribusiness skills and competencies for student employment were identified by the committee and were divided into several instructional units. The Employment in Agriculture curriculum guide is currently used as a source for planning instructional units in Nebraska.

Cooper, Teacher Educator at the University of Maryland and Harrod (1985), Vocational Agriculture Instructor, stated that due to the advancement of technology in agriculture, there is a need for continuous expansion and revision of competencies for employment in agriculture/ agribusiness occupations. They suggested that an agricultural employment needs assessment is useful to determine the changes in occupational needs and is, therefore, useful for adjusting curriculum in public school programs to meet the industry needs in agriculture.

Cooper and Harrod identified the employment needs of four counties in Maryland. They concluded that most of the jobs available were found in Horticulture and Agricultural Sales and Service, and that agribusiness employers were apparently satisfied with the work attitudes and competencies of their employees. Ninety-eight percent of the employers surveyed indicate that "The people I hire have positive work attitudes". It was further observed that eighty-nine percent of those surveyed agree with the statement "The people I hire have satisfactory agricultural knowledge and skills for my business."

In the same study it was observed that a majority of agribusiness employers felt that their employees were apparently not getting their

attitudes and competencies from formal education in agriculture. To the statement "I hire employees who have completed Vocational Agriculture in high school with no additional education," sixty-nine percent indicated "seldom" or "never". To the statement " I hire employees who have at least two years of college training in agriculture," sixty-one percent indicated "never". Cooper and Harrod recommended that additional studies be conducted to determine why agribusiness employers are not hiring more vocational agriculture graduates.

A study conducted by Larry Coltrane (1970) in an unpublished master's thesis, identified some of the competencies required for employment in the fertilizer industry in Kansas. Coltrane concluded that two of the highest priority skills which students should possess included the ability to operate equipment in a safe manner and perform routine maintenance on equipment. The lowest priority competency included the ability to use the cash register and other office equipment.

In a study conducted by Birkenholz and Stewart (1986), vocational agriculture instructors indicated that vocational agriculture programs were adequately preparing students for careers in production agriculture and agriculture mechanics. However, teachers in this study reported that local programs were less adequate in preparing students for careers in agribusiness.

Birkenholz et. al suggested that as a result of this study it appeared that modifying vocational agriculture programs to incorporate instruction in agribusiness was warranted. Teachers indicated that increased emphasis on agribusiness was needed. This would allow more

students to be served, and would not require a major revision in the existing program. Missouri teachers perceived themselves as being relatively prepared to teach agribusiness and indicated sufficient opportunities for SOEP in local communities.

Priebe (1986) surveyed 1,312 business firms from eight agribusiness industries. He concluded that: a) Employment is very stable in all of the selected industries, with some businesses anticipating a slight decline in full-time employment opportunities; b) the mean number of employees per agribusiness was increasing, reflecting that as businesses decline in number, the remaining businesses will probably expand in size; c) because little work experience and low levels of education were expected for several entry level occupational positions, there are opportunities for high school graduates to secure agribusiness employment. Priebe indicated that to advance professionally, one must secure higher levels of education, often a baccalaureate degree; d) a very high degree of variability existed among respondents for preferred years of work experience and preferred levels of education for several occupational positions identified.

Priebe also generalized that data gathered in this research effort indicated a situation of no-growth in numbers or even possibly a slight decline in employment opportunities. The data also reveal much variation between industries and occupations within industries concerning job opportunities, as well as levels of education and experience preferred. This information indicated that very careful planning is needed for educational programs in agriculture at all levels, and that students considering careers should examine their tentative choices carefully

concerning both employment opportunities and requirements. Priebe suggested that manpower data needs to be kept up-to-date because of rapid changes in both technology and the economy.

When looking at employment opportunities for agriculture graduates, Davis (1985) et. al identified the employment characteristics and the factors that were important in securing employment after graduation. The increasing importance of sales, management and administration occupations have implications for changes in collegiate curriculum that might be considered by the college of agriculture. Davis indicated that additional training in areas such as management principles, communication skills and interpersonal relations would be valuable additions to the curricula. A survey of graduates indicated that communication skills were influential in career advancement as well as the ability to organize, lead groups, and engage in problem solving.

Wilms (1984) conducted a study to obtain the employers view of vocational education and job success. One hundred and seventy-two firms were sampled whose workforce ranged from 50 to over 500 employees. Sixty-three percent of the employers regarded good work habits and positive attitudes as crucial to an employee's success on the job. Employees preferred by employers were those who were hard working and reliable rather than having specific skills. When Wilms asked employers if they preferred vocational or academic backgrounds in their employees, about 50% said that they had no preference, 34% selected a academic background and 17% selected a vocational background. When asked what schools should do to make young people more employable, employers

most often answered that schools should give higher priority to developing pride and self-discipline in their students and to teach reading, writing and arithmetic.

Career opportunities for the future were identified by the U.S. Department of Agriculture (1980) in a book entitled Agriculture 2000. As shown by the Department of Agriculture report, the demand for college graduates in the food and agricultural sciences was expected to exceed the available supply by 15%. Graduate degree shortages were forseen for masters and doctoral degrees essential for conducting research in agriculture. According to this report agribusiness management positions would not be filled by technicians or specialists. People in these four areas of management training would be in demand:

1. Finance - Finance and accounting experts will be needed to analyze investment opportunities, to deal with the financial impacts of government regulations, and to provide innovative ideas for raising capital and managing a company's cash flow.

2. Marketing - Agriculture must develop alternate methods of marketing their products to meet consumer needs and maintain profits.

3. Personnel - Because of the increased government regulations, human relation skills will be important to maintain labor relations, employee benefits, and deal with legal problems involved in operating a corporation.

4. Planning - The planning role will require an overall acquaintance of the entire corporation, require data processing knowledge and skills, and require excellent interpersonal skills.

A national study conducted by Litzenberg (1987) surveyed 543 respondents from twelve different types of agribusinesses from 41 states. Data in the report identified interpersonal skills and communication skills as the most important employment characteristics desired by all agribusiness firms. Categories for technical, computer, quantitative

skills and work experience varied significantly from one firm type to the next.

Litzenberg concluded that any effective agribusiness education program in the future will require a commitment of time and money from public and private interests. Future educational programs in agribusiness will depend heavily on the researcher's ability to develop curriculum, courses in agribusiness and the ability to provide relevant course materials to the current instructors of agribusiness education.

METHODS AND PROCEDURES

The primary purpose of this study was to identify agribusiness skills which are required by a student for entry level employment in Nebraska agribusinesses as perceived by Nebraska vocational agriculture instructors and agribusiness managers.

The specific objectives of this study were to:

1. Identify demographic information from various Nebraska agribusinesses and vocational agriculture instructors, including employment opportunities and requirements for employment.
2. Identify the skills required for employment in an agribusiness as perceived by selected Nebraska agribusiness persons and vocational agriculture instructors.
3. Determine differences between skills required for employment in an agribusiness as perceived by Nebraska vocational agriculture instructors and Nebraska agribusiness persons.
4. Determine differences between skills required for employment in each of seven selected types of agribusiness as perceived by Nebraska agribusiness managers.
5. Determine agribusiness skills required for employment based on the agribusiness respondent's level of education.
6. Determine the level of education required for employees hired by Nebraska agribusiness respondents.
7. Determine the level of education required for employees to be hired in each of seven identified agribusiness areas.

Selection of the Sample

The population for this study consisted of all 128 secondary vocational agriculture instructors in Nebraska and the managers of businesses serving agriculture in the communities which offer vocational agriculture. The initial respondent sample consisted of 36 Nebraska vocational agriculture instructors and 252 Nebraska agribusiness persons

located throughout the state.

Three vocational agriculture instructors were randomly selected from each of the twelve NVAA districts in Nebraska. The vocational agriculture instructors were contacted and asked to identify names and addresses of managers of seven agribusinesses in their community based on the following criteria (Appendix A).

1. The business should employ at least 10 people.
2. The business should be agriculturally related.
3. The business should provide employment opportunities for secondary and/or postsecondary agricultural graduates.
4. The businesses represent one of each of the following agribusiness areas: production agriculture, agricultural supplies, agricultural sales and service, agricultural finance, agricultural mechanics, manufacturing, and horticulture.

Of the 252 agribusinesses identified by the agriculture instructors 72 respondents were eliminated because they did not meet the studies criteria of employing at least ten people. The final sample used in the study consisted of 36 vocational agriculture instructors and 180 agribusiness persons.

Development of the Questionnaire

In 1985 the University of Nebraska Agricultural Education Department conducted a series of workshops for vocational agriculture instructors interested in developing agribusiness curriculum. Each participant received a copy of the Mid America Vocational Curriculum Consortium

(MAVCC) guide for teaching Employment in Agriculture (1984) as a resource to improve their instruction.

The MAVCC curriculum guide served as the primary source for determining the agribusiness competencies which were used in this study. Competencies were selected from 16 instructional units located in the MAVCC curriculum guide. After reviewing the instructional units, 66 specific agribusiness skills were identified and were listed for further evaluation.

The Likert Method of Summated Ratings was selected for the method of evaluation of competencies because of its extensive use in opinion research. A rated scale of 1-9 was used to determine the perceived importance of each skill for an employment requirement in an agribusiness. A value of "1" was used to indicate a skill not required for employment in an agribusiness. A value of "3" was used to indicate a skill seldom required. A value of "5" was used to indicate a skill sometimes required. A value of "7" was used to indicate a skill usually required and a value of "9" was used to indicate a skill always required.

A preliminary questionnaire was developed to determine the content validity and clarity of directions for the survey. Forty-nine agribusinesses across the state were selected from the 1986 Nebraska Business Directory to pilot test the instrument. The recommendations from the pilot survey indicated that the survey format should be changed to identify skills by subject area groupings. Survey items were further divided into six categories of agribusiness skills which included job skills required for a student to obtain employment in an agribusiness, general business skills, sales skills, office equipment skills,

communication skills, and customer relation skills. These six categories provided an organized structure for the respondents to review employee skill requirements and determine the importance of these skills for employment in their business. Forty survey items were selected from the 66 original skills identified in the pilot study.

Information from the pilot study was used to design two different surveys to collect data for this study. The first survey (Appendix B) was designed for the agribusiness manager to supply demographic information about their agribusiness and to provide their perceptions of the importance of the 40 agribusiness employment competency skills.

The second survey (Appendix B) was designed for the vocational agriculture instructors to identify information about their own vocational agriculture programs and to provide their perceptions of the importance of the 40 agribusiness skills for employment.

The instrument was revised and updated following a thorough review by agribusiness persons, graduate students, and faculty members of the University of Nebraska Agricultural Education Department.

Collection of Data

A mailed survey was used to collect the data for the study. All randomly selected vocational agriculture instructors and identified agribusiness managers received a questionnaire. A cover letter sent to both agribusiness managers and instructors was included with the questionnaire which provided instructions and a brief explanation of the survey. All surveys were accompanied by a postage paid, self-addressed envelope.

Three weeks after the initial survey was mailed the first follow up letter (Appendix C), second questionnaire, and a self addressed postage paid envelope was sent to the nonrespondents. Agribusiness managers and vocational agriculture instructors who had not yet responded were urged to send in their repsonses as soon as possible. Three weeks after the second questionnaire was mailed, telephone calls were placed to 20% of the agribusinesses and all of the remaining vocational agriculture instructor nonrespondents to encourage their participation. Two weeks after the nonrespondents were contacted by telephone and letter (Appendix C), the collection of data was declared complete. Results of a T-test indicated that there was no significant difference in responses between the initial respondents and the nonrespondents.

Data in Table I indicate the rate of response for the 36 vocational agriculture instructors and the 180 agribusiness managers. The 36 vocational agriculture instructors returned 31 completed forms and provided a survey return rate of 86 percent. The 180 agribusiness persons surveyed returned a total of 140 completed surveys which provided 78 percent return rate for the sample population.

Data in Table 2 identified the number of agribusiness persons surveyed in each of the seven major areas of agribusiness. Twenty-five respondents were identified in agricultural production, 23 in agricultural supplies, 34 in agricultural sales and service, 30 in agricultural finance, 27 in agricultural mechanics, 24 in manufacturing, and 17 in horticulture. The two agribusiness areas which provided the highest percentage of completed surveys were agricultural production and agricultural finance. The two agribusiness areas which provided the

Table 1
Response Rate of Vocational Agriculture Instructors and Agribusiness Respondents

Respondent Group	Mailed	Received	% Total
Vocational Agriculture Instructor	36	31	86
Agribusiness Managers	180*	140	78
Total	216	171	79

Note:* Of the 252 agribusinesses initially identified only 180 met all the criteria for initial participation in the study.

lowest return rates were agricultural mechanics and manufacturing.

Analysis of Data

The following procedures were used in the analysis of the data:

-The survey was designed for the self-coding of data

-A code number was assigned to each questionnaire to identify the respondent's occupation and the community in which they were located.

-A code sheet (Appendix D) was designed to identify and describe each question found in the surveys.

-The returned questionnaires were checked for illegible and incomplete data. If the respondent failed to fill out parts of the questionnaire, it was recorded as "missing data".

-When evaluating the rated skills, the following guidelines were established: a score of 1 to 3.99 identified skills that were "seldom" to "never" required. A score of 4 to 6.99 identified skills that were "sometimes required" and a score of 7 or above identified skills that were

Table 2
Response Rate by Seven Occupational Areas of Agribusiness

Area of Agribusiness	Mailed	Received	% Total
Ag. Production	25	21	84
Ag. Supplies	23	18	78
Ag. Sales and Service	34	26	76
Ag. Finance	30	27	90
Ag. Mechanics	27	18	67
Manufacturing	24	16	67
Horticulture	17	14	82
Total	180*	140	78

Note:* Of the 252 agribusinesses initially identified only 180 met all the criteria for initial participation in the study.

"always required".

-The data was entered directly from the questionnaire into a CSM data base using a IBM personal computer. The data was then transferred to the Institute of Agriculture and Natural Resources (IANR) Computing Network at the University of Nebraska, Lincoln.

-Surveys with missing data were not included in this study when comparing agribusiness respondents and vocational agriculture instructors.

-All agribusiness respondent surveys were used in this study when evaluating the skills required for employment by each of the seven occupational areas of agribusiness.

-Means, standard deviations and analysis of variance were computed for survey items that represented ratings of competencies which were

considered important for employment in an agribusiness.

-Frequency distributions and percentages were used to report responses to demographic questions and their relationship to the study.

-The Analysis of Variance (ANOVA) was used to reveal differences among specific groups for both demographic and skill data. A Tukey post hoc test was used to determine which groups differed significantly through comparison of composite scores.

-A Cronback Alpha Reliability Coefficient was calculated on the entire instrument, yielding an r-value of .9389 on the agribusiness instrument and a r-value of .9534 on the vocational agriculture instructor instrument.

-An independent T-test was used to determine differences between sample means of primary respondent groups and final nonrespondents. No differences were found.

FINDINGS AND DISCUSSION

The purpose of this study was to identify agribusiness skills which are required for entry level employment by Nebraska agribusinesses as perceived by Nebraska vocational agriculture instructors and agribusiness managers.

The population of this study consisted of all 128 secondary vocational agriculture instructors in Nebraska and the agribusinesses serving agriculture in the communities which offer vocational agriculture. The respondent sample consisted of 36 Nebraska vocational agriculture instructors and 180 Nebraska agribusiness persons located throughout the state. Three vocational agriculture instructors were randomly selected from each of the twelve NVAA districts in Nebraska. The selected vocational agriculture instructors identified addresses of seven agribusinesses from their communities which represented each of seven selected agribusiness occupational areas.

The findings and discussion in this chapter are represented in the following order: 1) demographic information from respondents, 2) skills required for employment as perceived by Nebraska agribusiness managers and vocational agriculture instructors, 3) skills required for employment by each of seven agribusiness occupational areas as perceived by Nebraska agribusiness managers, 4) skills required for employment based on the agribusiness respondents' level of education, 5) the level of education required for employment in an Nebraska agribusiness, and 6) the level of education required for employment in each of seven agribusiness occupational areas.

1) Demographic Information from Respondents

Agribusiness Managers:

Demographic data from 140 agribusiness managers yielded a description of these respondents. It was determined that:

-42% of the respondents possessed 16 or more years of experience in their current position.

-85% of the agribusinesses surveyed have been in operation for more than 16 years.

-82% of the respondents employed less than 50 employees.

-70% of the respondents hired less than 2 new employees per year.

-91% of the respondents were aware of the purpose of vocational agriculture.

-63% of the respondents were enrolled in vocational agriculture when they were in high school.

-49% of the respondents had a college degree.

-20% of the respondents had a college degree in agriculture, 18% had a degree in business and 44% of the respondents had no college degree at all.

-61% of the respondents felt that students benefited from taking vocational agriculture, but did not require the student to be enrolled in vocational agriculture to gain employment.

It was further observed that the majority of respondents were experienced in their job and the businesses used in the survey were well established. Employment information from Nebraska agribusiness managers indicated that most of the agribusinesses employed less than ten employees and that 70% of the employment opportunities for students was

limited to one or two new positions per year.

A high percentage of the agribusiness respondents were aware of the purpose of vocational agriculture and were enrolled in the program when they were in high school. The college history of the respondents indicated a wide range of educational background.

Similar results were found by Cooper (1985) on the agribusiness employment needs of 162 agribusiness respondents from various counties in Maryland. Cooper concluded that many agribusinesses employ less than ten employees, seventy-five percent of the employers "seldom" or "never" hire employees who completed high school vocational agriculture.

Vocational Agriculture Instructors:

Demographic data were collected from 31 vocational agriculture instructors. It was observed that:

-67% of the vocational agriculture respondents had seven or more years of teaching experience.

-74% of the communities which provided vocational agriculture instruction had a population of over 1000 people.

-61% of the high schools which provided vocational agriculture instruction had a total enrollment of 300 students or less.

-65% of the vocational agriculture programs had a total enrollment of 16-45 students.

-77% of the vocational agriculture instructors provided agribusiness instruction in their vocational agriculture program.

-52% of the instructors surveyed did not have a copy of the MAVCC curriculum guide.

The demographic information indicated that the majority of instructors surveyed had adequate teaching experience. The majority of the communities were large enough to provide opportunities for employment for students. Total high school enrollment and enrollment in vocational agriculture programs indicated that student population has declined.

Although most of the instructors provided some instruction in agribusiness, only one-half of the instructors possessed a copy of the MAVCC curriculum guide. Data collected on the usage of the MAVCC curriculum guide were not considered valid for this research project because the sample population of vocational agriculture instructors which actually used the curriculum guide in their instruction was to small.

2) Skills Required for Employment as Perceived by Nebraska Agribusiness Managers and Vocational Agriculture Instructors

Information reported was obtained from 30 vocational agriculture instructors and 125 agribusiness persons. Surveys identified as incomplete were not included in the final analysis of this data.

The top 10 agribusiness employment skills identified as being required (7.0 or above on a 9 point scale) for employment in Nebraska agribusinesses as perceived by vocational agriculture instructors included the ability to:

get along with people (8.77)
complete an employment application (8.57)
talk to customers (8.50)
use the telephone (8.37)
demonstrate interviewing techniques (8.33)
utilize product knowledge for customer relations (8.30)
recognize/help customers (7.97)
write a resume (7.93)
complete a letter of application (7.90)
prepare a sales ticket (7.83).

The top 10 agribusiness employment skills identified as being required (7.0 or above) for employment in a Nebraska agribusiness as perceived by agribusiness managers included the ability to:

get along with people (8.24)
obtain a social security card (7.98)
use the telephone (7.69)
use the adding machine (7.54)
talk to customers (7.47)
utilize product knowledge for customer relations (7.38)
recognize/help customers (7.11)
complete an employment application (6.98)
handle complaints (6.87)
utilize product knowledge for a sales skill (6.72)

The only employment skill that was identified as "never" required (3.99 or below) for employment in a Nebraska agribusiness as perceived by vocational agriculture instructors included the ability to program a computer (3.63). Additional skills which rated of less importance for skill requirements included the ability to:

plan a floor layout (5.17)
prepare a newspaper advertisement (5.60)
determine stock turnover (5.63)
use computer word processing skills (5.80)
use microfiche (5.80)
calculate profit/loss (5.90)
select advertising media (5.97)
plan/create a display (6.07)
determine take home pay (6.27)

Seven skills were identified as "never" required (3.99 or below) for employment in a Nebraska agribusiness as perceived by agribusiness managers include the ability to:

program a computer (2.56)
determine stock turnover (3.33)
plan a floor layout (3.38)
select advertising media (3.45)
prepare a newspaper advertisement (3.52)
calculate profit/loss (3.82)
use computer word processing skills (3.86).

Vocational agriculture instructors identified 22 skills in the required (7.0 or above) category for employment in a Nebraska agribusiness. The agribusiness respondents identified 7 skills as required for employment in an agribusiness.

Agribusiness respondents and vocational agriculture instructors agreed on 5 of the 10 employment skills identified as being required skills for employment in an agribusiness. These skills included the ability to: get along with people, talk to customers, use the telephone, use product knowledge for customer relations, and recognize/help customers.

Agribusiness respondents and vocational agriculture instructors agreed on 9 of the 10 least required employment skills for a student to possess for employment in an agribusiness. This skills included: programming a computer, planning a floor layout, preparing a newspaper advertisement, determining stock turnover, using computer word processing skills, using the microfiche, calculating profit/loss, selecting advertising media and planning/creating a display.

The major difference in the perception of the vocational agriculture instructor and the agribusiness respondents was the degree at which the skills were rated by both groups. Vocational agriculture instructors rated skills significantly higher than the agribusiness respondent group. This could possibly be attributed to the fact that the vocational agriculture instructor was viewing the skills as broad based curriculum areas rather than "survival" skills. The vocational agriculture instructor is possibly looking for the overall educational preparation of the student while the agribusiness respondent may be only viewing skills

required for immediate success in their specific agribusiness operation.

Table 3 provided information on six skills which may be required for a student to obtain employment in an agribusiness. The vocational agriculture instructor identified completing an employment application (8.57) as the most important skill required for a student to obtain employment. Other skills which were identified by the instructors as required for employment include interviewing techniques (8.33), writing a resume (7.93), writing a letter of application (7.90), and obtaining a social security card (7.63). The agribusiness manager identified obtaining a social security card (7.98) as the most important skill required to obtain employment in their agribusiness. The agribusiness person ranked the employment application (6.98) second in importance for gaining employment. Both respondent groups rated determining take home pay as the least required skill to obtain employment in their business. Interviewing techniques, writing a resume, completing a letter of application, determining take home pay and completing an employment application were skills for which significant differences ($p<.01$) were observed between respondent groups.

Information presented in this section supports information about vocational agriculture instructors educational background and their perception of educating students for a variety of levels of employment. Skills required to obtain employment for students entering the general work force directly out of high school may be very minimal when compared to students applying for more job specific or professional positions.

Table 3

Means, Standard Deviations, Rank and T-values for Skills Required to Obtain Employment in an Agribusiness

Employment Skills		Instructors N=30	Agribusinesses N=125	T-value
Obtaining a social security card	M.	7.63	7.98	-0.78
	S.D.	1.94	2.25	
	R.	5	1	
Employment application	M.	8.57	6.98	3.85**
	S.D.	0.77	2.23	
	R.	1	2	
Interviewing techniques	M.	8.33	5.93	5.83**
	S.D.	0.88	2.21	
	R.	2	3	
Resume	M.	7.93	5.24	6.21**
	S.D.	1.29	2.29	
	R.	3	4	
Letter of application	M.	7.90	5.02	6.96**
	S.D.	1.24	2.18	
	R.	4	5	
Take home pay	M.	6.27	4.86	2.85**
	S.D.	2.24	2.48	
	R.	6	6	

Note: M=Mean, S.D.=Standard Deviation, R=Rank
**($p<.01$) significant difference observed

Table 4 identified 14 business skills which may be required for employment in an agribusiness. The vocational agriculture instructor identified the skill preparing a sales ticket (7.83) as the most important business skill required for employment in an agribusiness. Other skills which may be identified as required (7.0 or above) included: counting change (7.70), figuring sales tax (7.47), accepting credit cards and checks (7.47), balancing a cash register (7.23), and calculating

Table 4

Means, Standard Deviations, Rank and T-values for Business Skills Required for Employment in an Agribusiness

Business Skills		Instructors N=30	Agribusinesses N=125	T-value
Count change	M.	7.70	6.10	2.74**
	S.D.	1.37	3.13	
	R.	2	1	
Prepare sales ticket	M.	7.83	6.04	3.17**
	S.D.	1.51	3.00	
	R.	1	2	
Accept credit cards/checks	M.	7.47	5.87	2.58*
	S.D.	1.57	3.29	
	R.	4	3	
Calculate percentages	M.	6.97	5.53	2.96**
	S.D.	1.50	2.56	
	R.	7	4	
Figure sales tax	M.	7.47	5.50	3.40**
	S.D.	1.53	3.06	
	R.	3	5	
Calculate discounts	M.	7.07	5.42	3.21**
	S.D.	1.62	2.68	
	R.	6	6	
Order/receive merchandise	M.	6.53	5.42	2.46*
	S.D.	1.68	2.34	
	R.	10	7	
Complete purchase order	M.	6.63	5.07	3.17**
	S.D.	1.69	2.57	
	R.	9	8	
Balance cash register	M.	7.23	4.89	4.11**
	S.D.	1.36	3.05	
	R.	5	9	
Check cash balances	M.	6.80	4.64	3.91**
	S.D.	1.42	2.93	
	R.	8	10	

Note: M=Mean, S.D.=Standard Deviation, R=Rank
**($p<.01$) significant difference observed
*($p<.05$) significant difference observed

Table 4 (continued)

Means, Standard Deviations, Rank and T-values for Business Skills Required for Employment in an Agribusiness

Business Skills		Instructors N=30	Agribusinesses N=125	T-value
Calculate interest	M.	6.37	4.57	3.29**
	S.D.	1.69	2.88	
	R.	11	11	
Computer/ word proc. skills	M.	5.80	3.86	4.19**
	S.D.	1.81	2.38	
	R.	13	12	
Calculate profit/loss	M.	5.90	3.82	4.20**
	S.D.	2.06	2.51	
	R.	11	13	
Program a computer	M.	3.63	2.56	2.79**
	S.D.	1.71	1.93	
	R.	14	14	

Note: M=Mean, S.D.=Standard Deviation, R=Rank
**($p<.01$) significant difference observed

discounts (7.07).

Agribusiness respondents identified counting change (6.10) as the most important business skill required for employment. The agribusiness respondents did not identify any business skills as being required (7.0 or above) for employment but did identify eleven business skills as being required "sometimes". Both respondent groups identified the skill "programming a computer" as the least required business skill for employment in an agribusiness.

Twelve skills which included checking a cash balance, counting change, balancing a cash register, figuring sales tax, calculating percentages, calculating discounts, preparing a sales ticket, completing

a purchase order, computer word processing skills, calculating profit/loss, programming a computer and calculating interest were observed to have significant difference ($p<.01$) between respondent groups. Two skills which included ordering and receiving merchandise and accepting credit cards/checks had significant difference ($p<.05$) between respondent groups as well.

Table 5 lists eight sales skills which may be required for employment in a Nebraska agribusiness. Vocational agriculture instructors identified the ability to utilize product knowledge for sales (7.70) as the highest rated sales skill required for employment. They also identified the ability to close a sale (7.23) as a sales skill required by an agribusiness. Agribusiness respondents identified the ability to utilize product knowledge for sales (6.72) as the most important business skill required for employment. The agribusiness respondents did not identify any sales skills which they felt were required (7.0 or above) for employment. The vocational agriculture instructors identfied the ability to plan a floor layout (5.17) and the agribusiness person identified the ability to determine stock turnover (3.33) as the sales skills least required for employment in an agribusiness.

Seven skills which included the ability to: maintain inventory, close a sale, plan/create a display, prepare a newspaper ad, select advertising media, plan a floor layout, and determine stock turnover had a significant difference ($p<.01$) between respondent ratings of the importance of each skill for employment in a agribusiness. One skill (ability to utilize product knowledge for sales) had a significant

Table 5

Means, Standard Deviations, Rank and T-values for Sales Skills Required for Employment in an Agribusiness

Sales Skills		Instructors N=30	Agribusinesses N=125	T-value
Possess product knowledge	M.	7.70	6.72	2.00*
	S.D.	1.64	2.56	
	R.	1	1	
Close a sale	M.	7.23	5.74	2.83**
	S.D.	1.50	2.79	
	R.	2	2	
Maintain inventory	M.	6.57	5.22	2.85**
	S.D.	1.59	2.46	
	R.	3	3	
Plan/create a display	M.	6.07	4.28	3.52**
	S.D.	1.78	2.64	
	R.	4	4	
Prepare a newspaper ad	M.	5.60	3.52	4.82**
	S.D.	1.85	2.18	
	R.	7	5	
Select advertising media	M.	5.97	3.45	6.02**
	S.D.	1.79	2.12	
	R.	5	6	
Plan a floor layout	M.	5.17	3.38	3.84**
	S.D.	1.74	2.40	
	R.	8	7	
Determine stock turnover	M.	5.63	3.33	5.03**
	S.D.	2.09	2.29	
	R.	6	8	

Note: M=Mean, S.D.=Standard Deviation, R=Rank
**($p<.01$) significant difference observed
*($p<.05$) significant difference observed

difference at the .05 level.

Office equipment skills which may be required for employment in a Nebraska agribusiness are presented in Table 6. Vocational agriculture

Table 6

Means, Standard Deviations, Rank and T-values for Office Equipment Skills Required for Employment in an Agribusiness

Office Equipment Skills		Instructors N=30	Agribusinesses N=125	T-value
Use telephone	M.	8.37	7.69	1.75
	S.D.	1.22	2.04	
	R.	1	1	
Use adding machine	M.	7.67	7.54	0.34
	S.D.	1.42	1.95	
	R.	2	2	
Use cash register	M.	7.63	5.29	3.74**
	S.D.	1.33	3.37	
	R.	3	3	
Use microfiche	M.	5.80	4.45	2.25*
	S.D.	1.56	3.19	
	R.	5	4	
Operate computer	M.	6.57	4.21	4.45**
	S.D.	1.70	2.78	
	R.	4	5	

Note: M=Mean, S.D.=Standard Deviation, R=Rank
**($p<.01$) significant difference observed
*($p<.05$) significant difference observed

instructors identified the use of the telephone (8.37) as the office equipment skill most required for employment in an agribusiness. They also identified the use of the adding machine (7.67) and the use of the cash register (7.63) as office skills required for employment. Agribusiness respondents also identified the use of the telephone (7.69) and the use of the adding machine (7.54) as required skills for employment. Two of the six office skills had significantly different ratings of ($p<.01$) between respondent groups. These skills included the ability to operate a computer, and use the cash register. The ability to use the microfiche also had a significant difference ($p<.05$) between

respondent groups.

Communication skills listed in Table 7 identify five skills which may be required for employment in an agribusiness. Vocational agriculture instructors identified the skill "getting along with people" (8.77) as the communication skill most required for employment in an agribusiness. They also identified the ability to talk to customers (8.50), and the ability to introduce yourself and others (7.70) as required communication skills for employment. Agribusiness respondents identified the ability to get along with people (8.24), and the ability to talk to customers (7.47) as requirements to gain employment in their agribusiness. Both respondent groups rated the ability to speak to large groups (4.62) as the least important communication skill required for employment. Four communication skills which included the ability to: talk to customers, introduce yourself and others, organize and present a demonstration, and speak to large groups were observed to have a significant difference ($p<.01$) between respondent groups and their perceptions of the importance of the skills required for employment.

Table 8 lists three customer relation skills which may be important for employment in an agribusiness. The vocational agriculture instructors and agribusiness respondents identified the ability to have product knowledge (8.30 and 7.38 respectively), the ability to recognize/help customers (7.79 and 7.11 respectively), and the ability to handle complaints (7.60 and 6.87 respectively) as required for employment. Two skills which include the ability to possess product knowledge and recognize/help customers had a significantly different

Table 7

Means, Standard Deviations, Rank and T-values for Communication Skills Required for Employment in an Agribusiness

Communication Skills		Instructors N=30	Agribusinesses N=125	T-value
Get along with people	M.	8.77	8.24	1.96
	S.D.	0.68	1.43	
	R.	1	1	
Talk to customers	M.	8.50	7.47	2.78**
	S.D.	1.01	1.96	
	R.	2	2	
Introduce yourself and others	M.	7.70	6.50	3.06**
	S.D.	1.69	1.99	
	R.	3	3	
Organize and present a demonstration	M.	6.63	4.74	4.44**
	S.D.	1.83	2.15	
	R.	4	4	
Speak to large groups	M.	6.47	4.62	4.62**
	S.D.	1.87	2.00	
	R.	5	5	

Note: M=Mean, S.D.=Standard Deviation, R=Rank
**($p<.01$) significant difference observed

($p<.05$) ratings as perceived by respondent groups.

Table 9 compares the composite scores of each of the major groupings of agribusiness skills identified in this study. The vocational agriculture instructor ranked customer relation skills (7.96) as the most required (7.0 or above) for employment in an agribusiness. Employment skills (7.77) ranked second as required for employment followed by communication skills (7.61) and office skills (7.20). Business skills (6.67) and sales skills (6.24) rated high but were not identified as required for employment in an agribusiness.

Agribusiness respondents identified customer relation skills (6.96)

Table 8

Means, Standard Deviations, Rank and T-values for Customer Relation Skills Required for Employment in an Agribusiness

Customer Relation Skills		Instructors N=30	Agribusinesses N=125	T-value
Possess product knowledge	M.	8.30	7.38	2.36*
	S.D.	1.06	2.08	
	R.	1	1	
Recognize/ help customers	M.	7.97	7.11	2.01*
	S.D.	1.16	2.26	
	R.	2	2	
Handle complaints	M.	7.60	6.87	1.71
	S.D.	1.22	2.25	
	R.	3	3	

Note: M=Mean, S.D.=Standard Deviation, R=Rank
*($p<.05$) significant difference observed

as the skills most required for employment in an agribusiness. Communication skills (6.24) ranked second in importance followed by employment skills (5.93), office equipment skills (5.71), business skills (4.88), and sales skills (4.40). The agribusiness respondents did not identify a set of employment skills which they perceived were definitely required (7.0 or above) for employment in their agribusiness. All 6 agribusiness skill areas exhibited a significant differences ($p<.01$) in ratings between respondent groups.

Results of this study supports findings of a national study conducted by Litzenberg (1987) who surveyed 543 respondents from twelve different types of agribusinesses from 41 states. The report identified interpersonal skills and communication skills as the most important employment characteristics desired by all agribusiness firms.

The agribusiness response to the 40 skills in six specific

Table 9

Means, Standard Deviations, Rank and T-values of Composite Scores for Six Skill Areas Required for Employment in an Agribusiness

Composite Scores		Instructors N=30	Agribusinesses N=125	T-value
Customer Relation Skills	M.	7.96	6.96	2.46**
	S.D.	0.94	2.17	
	R.	1	1	
Communication Skills	M.	7.61	6.24	4.45**
	S.D.	1.13	1.61	
	R.	3	2	
Employment Skills	M.	7.77	5.93	7.09**
	S.D.	0.81	1.37	
	R.	2	3	
Office Equipment Skills	M.	7.20	5.71	4.22**
	S.D.	1.13	1.86	
	R.	4	4	
Business Skills	M.	6.67	4.88	4.91**
	S.D.	1.12	1.93	
	R.	5	5	
Sales Skills	M.	6.24	4.40	5.00**
	S.D.	1.48	1.88	
	R.	6	6	

Note: M=Mean, S.D.=Standard Deviation, R=Rank
**($p<.01$) significant difference observed

agribusiness skill areas suggests that the skills identified in this study were of less value to the students because the skills are not perceived as required by the employer. The composite scores indicate that the agribusiness skills are "sometimes required" (4.0 to 6.99 on a 9 point scale), which indicates that the perceptions of the agribusiness respondents may differ according to the type of agribusiness represented. This data were further analyzed to determine the agribusiness respondents

perception of skills required for employment as perceived by each of the seven agribusiness occupational areas identified in this study.

Vocational agriculture instructors identified four of the agribusiness skill areas as being required skills for employment in an agribusiness.

3) Skills Required for Employment by each of Seven Selected Occupational Areas as Perceived by Nebraska Agribusiness Managers

The data presented in tables 10-16 report the agribusiness respondent ratings of skills required for employment in seven agribusiness areas. The seven agribusiness areas identified include: agricultural production (N=21), agricultural supplies (N=18), agricultural sales and service (N=26), agricultural finance (N=27), agricultural mechanics (N=18), manufacturing (N=16), and horticulture (N=14).

All employment skill data collected from the 140 agribusiness respondents are reported in the following tables and are used in the final analysis of each employment skill. The mean, standard deviation, and rank were determined on each skill based on the total number of respondents in each agribusiness area. Vocational agriculture respondent scores are represented for comparison purposes. Incomplete surveys were not eliminated from the study in this section.

Information presented in Table 10 refers to the six skills that may be required to obtain employment in each of seven agribusiness areas. These skills included interviewing techniques, writing a resume, writing a letter of application, completing an employment application, obtaining a social security card, and determining take home pay. The following

Table 10

Means, Standard Deviations, and Ranks for Skills Required to Obtain Employment in each of Seven Agribusiness Areas

Skills Required to Obtain Employment		Ag. Production N=21	Ag. Supplies N=18	Ag. Sales and Service N=26	Ag. Finance N=27	Ag. Mechanics N=18	Manufacturing N=16	Horticulture N=14	Vocational Agriculture Instructors N=30
Interviewing Techniques	M.	5.30	5.82	6.08	6.74	5.61	5.38	5.43	8.33
	S.D.	2.39	2.27	2.06	2.09	2.43	2.36	2.31	.88
	R.	3	3	3	3	3	3	3	2
	N.	20	17	26	27	18	16	14	30
Resume	M.	4.45	5.59	5.68	5.67	4.22	4.81	5.07	7.93
	S.D.	2.80	2.65	1.49	2.08	2.42	2.64	2.62	1.29
	R.	4	4	4	5	5	5	5	3
	N.	20	17	25	27	18	16	14	30
Letter of Application	M.	3.61	4.39	5.46	6.31	3.94	4.87	5.00	7.90
	S.D.	2.12	2.70	1.70	1.41	1.70	2.59	2.60	1.24
	R.	5	5	5	4	6	4	6	4
	N.	18	18	26	26	18	15	14	30
Employment Application	M.	5.44	7.22	7.46	6.93	7.00	7.13	6.43	8.57
	S.D.	2.48	2.73	1.68	1.62	2.50	2.99	2.62	.77
	R.	2	1	2	2	2	2	2	1
	N.	18	18	26	27	18	16	14	30
Obtaining a social security card	M.	8.17	6.93	8.00	7.26	8.89	8.06	8.57	7.63
	S.D.	2.43	3.56	2.23	2.51	.47	2.11	1.09	1.94
	R.	1	2	1	1	1	1	1	5
	N.	18	15	26	27	18	16	14	30
Take home pay	M.	2.53	3.93	5.42	4.96	4.83	4.19	5.21	6.27
	S.D.	2.65	2.60	2.19	1.99	3.05	2.37	2.58	2.24
	R.	6	6	6	6	4	6	4	6
	N.	17	15	26	27	18	16	14	30
Composite Average	M.	4.92	5.65	6.35	6.31	5.75	5.74	5.95	7.77[a]
	R.	7	6	1	2	4	5	3	

Note: M = Mean, S.D. = Standard Deviation, R = Rank, Ag. = Agriculture, N =valid observations for this item
a = composite average is significantly different from all other groups.

skills were identified as required (7.0 or above on a 9 point scale) to obtain employment in these specific agribusinesses.

1. Completing an Employment Application
   - Agricultural Supplies (7.22)
   - Agricultural Sales and Service (7.46)
   - Agricultural Mechanics (7.00)
   - Manufacturing (7.13)

2. Obtaining a Social Security Card
   - Agricultural Production (8.17)
   - Agricultural Sales and Service (8.00)
   - Agricultural Finance (7.26)
   - Agricultural Mechanics (8.89)
   - Manufacturing (8.06)
   - Horticulture (8.57)

The following agribusiness areas identified these skills as not required (3.99 or below) to gain employment in their agribusiness.

1. Writing a Letter of Application
   - Agricultural Production (3.61)
   - Agricultural Mechanics (3.94)

2. Determining Take Home Pay
   - Agricultural Production (2.53)
   - Agricultural Supplies (3.93)

Vocational agriculture instructors rated Skills Required to Obtain Employment, the highest (7.77) of all respondent groups. The composite scores of the agribusiness groups included:

- Agricultural Sales and Service (6.35)
- Agricultural Finance (6.31)
- Horticulture (5.95)
- Agricultural Mechanics (5.75)
- Manufacturing (5.74)
- Agricultural Supplies (5.65)
- Agricultural Production (4.92)

The agribusiness respondents did not identify the categories of skills required to obtain employment as a required (7.0 or above) skill area needed for employment in their agribusiness. Implications of these findings suggest that vocational agriculture instructors may wish to

evaluate the amount of classroom time spent on teaching students skills to obtain employment.

A Tukey post hoc test indicated significantly higher perceptions of skills required to obtain employment by the vocational agriculture instructors when compared to all seven agribusiness groups.

The data presented in Table 11 reflect perceptions of agribusiness respondents regarding fourteen business skills identified in the survey. The business skills evaluated include checking cash balances, counting change, balancing a cash register, figuring sales tax, calculating profit/loss, calculating percentages, calculating discounts, preparing a sales ticket, accepting credit cards and checks, calculating interest, ordering and receiving merchandise, completing a purchase order, computer word processing skills, and programming a computer. The agribusiness areas identified these skills as required skills (7.0 or above) for employment in their agribusiness.

1. Counting Change
   - Agricultural Supplies (8.18)
   - Horticulture (7.86)

2. Figuring Sales Tax
   - Horticulture (7.57)

3. Preparing a Sales Ticket
   - Agricultural Supplies (7.33)
   - Agricultural Sales and Service (7.62)
   - Horticulture (8.07)

4. Accepting Credit Cards/Checks
   - Agricultural Supplies (8.00)
   - Horticulture (7.07)

5. Calculating Interest
   - Agricultural Finance (7.67)

6. Ordering and Receiving Merchandise
   - Agricultural Supplies (7.06)

Table 11

Means, Standard Deviations, and Rank for Business Skills Required for Employment in each of the Seven Agribusiness Areas

Business Skills		Ag. Production N=21	Ag. Supplies N=18	Ag. Sales and Service N=26	Ag. Finance N=27	Ag. Mechanics N=18	Manufacturing N=16	Horticulture N=14	Vocational Agriculture Instructors N=30
Check Cash Balances	M.	2.88	5.94	4.89	6.37	2.78	3.50	3.79	6.80
	S.D.	2.32	3.07	2.01	2.87	2.63	2.90	3.09	1.42
	R.	9	9	10	4	12	10	11	8
	N.	17	17	26	27	18	16	14	30
Count Change	M.	2.77	8.18	6.42	6.63	4.78	4.63	7.86	7.70
	S.D.	2.51	1.85	2.06	2.94	3.57	3.65	2.21	1.37
	R.	11	1	4	3	5, 6, 7	4	2	2
	N.	17	17	26	27	18	16	14	30
Balance Cash Register	M.	2.41	6.00	5.85	5.82	4.00	3.56	4.29	7.23
	S.D.	2.29	3.03	1.97	3.09	3.38	2.97	3.07	1.36
	R.	14	8	6	8	9	9	9	5
	N.	17	16	26	27	18	16	14	30
Figure Sales Tax	M.	3.12	6.88	6.89	3.93	5.56	4.19	7.57	7.47
	S.D.	2.50	2.71	2.05	2.93	3.43	3.02	2.28	1.53
	R.	7	5	2	13	3	7, 8	3	3
	N.	17	17	26	27	18	16	14	30
Calculate Profit/Loss	M.	2.94	3.25	3.73	6.26	2.67	2.63	2.93	5.90
	S.D.	2.86	1.61	1.54	2.68	2.30	1.82	2.24	2.06
	R.	8	12	13	5, 6	13	14	12	11
	N.	17	16	26	27	18	16	14	30
Calculate Percentages	M.	4.47	5.78	5.77	6.67	4.78	5.06	4.93	6.97
	S.D.	3.04	2.39	2.05	2.45	3.08	2.29	2.84	1.50
	R.	1	10	7	2	5, 6, 7	1	7	7
	N.	17	18	26	27	18	16	14	30
Calculate Discounts	M.	3.53	6.44	5.89	5.50	4.78	4.44	6.50	7.07
	S.D.	3.04	2.98	1.93	2.58	3.17	2.39	2.41	1.62
	R.	4, 5, 6	7	5	9	5, 6, 7	6	5	6
	N.	17	18	26	26	18	16	14	30

Note: M = Mean, S.D. = Standard Deviation, R = Rank, Ag. = Agriculture, N = valid observations for this item

Table 11 (cont'd)

Means, Standard Deviations, and Rank for Business Skills Required for Employment in each of the Seven Agribusiness Areas

Business Skills		Ag. Production N=21	Ag. Supplies N=18	Ag. Sales and Service N=26	Ag. Finance N=27	Ag. Mechanics N=18	Manufacturing N=16	Horticulture N=14	Vocational Agriculture Instructors N=30
Prepare Sales Ticket	M.	3.65	7.33	7.62	4.19	6.00	4.88	8.07	7.83
	S.D.	3.16	2.59	1.90	2.95	2.97	2.90	1.39	1.51
	R.	2	3	1	12	1	2	1	1
	N.	17	18	26	26	18	16	14	30
Accept Credit Card/Checks	M.	2.69	8.00	6.46	6.26	4.67	4.50	7.07	7.47
	S.D.	2.47	2.17	2.37	3.17	3.61	3.76	3.22	1.57
	R.	12	2	3	5, 6	8	5	4	4
	N.	16	18	26	27	18	16	14	30
Calculate Interest	M.	3.53	3.35	4.08	7.67	3.83	3.06	4.21	6.37
	S.D.	2.83	2.40	1.74	2.17	3.02	2.54	2.81	1.69
	R.	4, 5, 6	11	11	1	10	12	10	11
	N.	17	17	26	27	18	16	14	30
Order/Receive Merchandise	M.	3.59	7.06	5.73	5.42	5.67	4.75	4.86	6.53
	S.D.	2.72	2.21	1.69	2.08	2.20	2.52	2.69	1.68
	R.	3	4	8	10	2	3	8	10
	N.	17	18	26	26	18	16	14	30
Complete Purchase Order	M.	3.53	6.71	5.08	4.37	5.50	4.19	5.43	6.63
	S.D.	2.94	2.49	1.94	2.45	2.71	2.71	2.93	1.69
	R.	4, 5, 6	6	9	11	4	7, 8	6	9
	N.	17	17	26	27	18	16	14	30
Computer Word/ Processing Skills	M.	2.82	2.81	3.89	5.96	3.61	3.31	2.57	5.80
	S.D.	2.35	2.32	1.82	2.12	2.36	2.06	1.65	1.81
	R.	10	13	12	7	11	11	13	13
	N.	17	16	26	27	18	16	14	30

Note: M = Mean, S.D. = Standard Deviation, R = Rank, Ag. = Agriculture, N = valid observations for this item.

Table 11 (cont'd)

Means, Standard Deviations, and Rank for Business Skills Required for Employment in each of the Seven Agribusiness Areas

Business Skills		Ag. Production N=21	Ag. Supplies N=18	Ag. Sales and Service N=26	Ag. Finance N=27	Ag. Mechanics N=18	Manufacturing N=16	Horticulture N=14	Vocational Agriculture Instructors N=30
Program A Computer	M.	2.47	1.77	2.35	3.30	2.56	2.88	2.07	3.63
	S.D.	2.27	1.75	1.44	1.71	2.33	2.19	1.59	1.71
	R.	13	14	14	14	14	13	14	14
	N.	17	17	26	27	18	16	14	30
Composite Average	M.	3.17 [a]	5.68	5.33 [c]	5.60	4.37 [c]	3.97 [b]	5.15	6.67
	R.	7	1	3	2	5	6	4	

Note: M = Mean, S.D. = Standard Deviation, R = Rank, Ag. = Agriculture, N = valid observations for this item
a = significantly different than ag. supplies, ag. sales and service, ag. finance, horticulture, and voc. ag. instructors.
b = significantly different from ag. finance, ag. supplies, and the voc. ag. instructor.
c = significantly different from voc. ag. instructor

The following agribusiness areas identified these business skills as not required (3.99 or below) to gain employment in their agribusiness.

1. Checking Cash Balances
   - Agricultural Production (2.88)
   - Agricultural Mechanics (2.78)
   - Manufacturing (3.50)
   - Horticulture (3.79)

2. Counting Change
   - Agricultural Production (2.77)

3. Balancing a Cash Register
   - Agricultural Production (2.41)
   - Manufacturing (3.56)

4. Figuring Sales Tax
   - Agricultural Production (3.12)
   - Agricultural Finance (3.93)

5. Calculating Profit/Loss
   - Agricultural Production (2.94)
   - Agricultural Supplies (3.25)
   - Agricultural Sales and Service (3.73)
   - Agricultural Mechanics (2.67)
   - Manufacturing (2.63)
   - Horticulture (2.93)

6. Calculating Discounts
   - Agricultural Production (3.53)

7. Preparing a Sales Ticket
   - Agricultural Production (3.65)

8. Accepting Credit Cards/Checks
   - Agricultural Production (2.69)

9. Calculating Interest
   - Agricultural Production (3.53)
   - Agricultural Supplies (3.35)
   - Agricultural Mechanics (3.83)
   - Manufacturing (3.06)

10. Ordering and Receiving Merchandise
    - Agricultural Production (3.59)

11. Completing a Purchase Order
    - Agricultural Production (3.53)

12. Computer Word Processing Skills
    - Agricultural Production (2.82)
    - Agricultural Supplies (2.81)
    - Agricultural Sales and Service (3.89)
    - Agricultural Mechanics (3.61)
    - Manufacturing (3.31)
    - Horticulture (2.57)

13. Programming a Computer
    - Agricultural Production (2.47)
    - Agricultural Supplies (1.77)
    - Agricultural Sales and Service (2.35)
    - Agricultural Finance (3.30)
    - Agricultural Mechanics (2.56)
    - Manufacturing (2.88)
    - Horticulture (2.07)

The vocational agriculture instructor rated the business skill category highest (6.67) of all the respondent groups. The following composite scores for business skills were calculated for each agribusiness respondent group:

- Agricultural Supplies (5.68)
- Agricultural Finance (5.60)
- Agricultural Sales and Service (5.33)
- Horticulture (5.15)
- Agricultural Mechanics (4.37)
- Manufacturing (3.97)
- Agricultural Production (3.17)

Composite scores of all the respondent groups indicated that business skills are not generally considered required for employment in a Nebraska agribusiness.

A Tukey post hoc test indicated differences in business skills required for employment among several agribusiness areas. The agricultural production respondents perception of business skills required for employment was significantly lower than the perceptions of the respondents representing horticulture, agricultural sales and service, agricultural finance, agricultural supplies and the vocational

agriculture instructors.

The manufacturing respondents perception of business skills required for employment in their agribusiness is significantly lower than the responses of agricultural finance, agricultural supplies and the vocational agriculture instructors. Agricultural sales and service and agricultural mechanics respondents indicated a significantly lower perception of business skills required for employment in an agribusiness than the vocational agriculture instructors.

Responses from agribusiness managers from seven agribusiness areas (Table 12) identified sales skills required for employment in their agribusiness. These skills included the ability to maintain inventory, close a sale, select advertising media, plan/create a display, prepare a newspaper ad, determine stock turnover, plan a floor layout, and possess product knowledge. The agribusiness managers from the following areas identified these skills as required (7.0 or above) skills for employment in their agribusiness.

1. Close a Sale
   - Agricultural Supplies (7.18)
   - Agricultural Sales and Service (7.15)
   - Horticulture (7.29)

2. Possess Product Knowledge
   - Agricultural Supplies (7.18)
   - Agricultural Sales and Service (7.58)
   - Horticulture (7.79)

These agribusiness respondent groups identified the following skills as not required (3.99 or below) for employment in their agribusiness.

1. Maintain Inventory
   - Agricultural Production (3.67)
   - Agricultural Finance (3.89)

Table 12

Means, Standard Deviations, and Rank for Sale Skills Required for Employment in each of Seven Agribusiness Areas

Sales Skills		Ag. Production N=21	Ag. Supplies N=18	Ag. Sales and Service N=26	Ag. Finance N=27	Ag. Mechanics N=18	Manufacturing N=16	Horticulture N=14	Vocational Agriculture Instructors N=30
Maintain Inventory	M.	3.67	6.53	6.31	3.89	5.17	5.13	5.36	6.57
	S.D.	2.30	2.39	1.67	2.42	2.57	2.58	2.53	1.59
	R.	2	3	3	4	2	3	4	3
	N.	18	15	26	27	18	16	14	30
Close a Sale	M.	2.67	7.18	7.15	4.78	4.89	5.19	7.29	7.23
	S.D.	2.11	2.16	1.78	2.69	2.81	3.17	2.13	1.50
	R.	3	1, 2	2	2	3	2	2	2
	N.	18	17	26	27	18	16	14	30
Select Advertising Media	M.	2.11	3.40	4.39	3.93	2.83	3.25	3.00	5.97
	S.D.	2.17	2.29	1.55	2.06	2.33	2.27	1.88	1.79
	R.	6	8	6	3	8	6, 7	6, 7	5
	N.	18	15	26	27	18	16	14	30
Plan/Create A Display	M.	1.78	6.41	5.08	3.07	3.39	4.13	6.14	6.07
	S.D.	1.93	2.27	1.72	2.00	2.64	2.92	2.60	1.78
	R.	7	4	4	6	5	4	3	4
	N.	18	17	26	27	18	16	14	30
Prepare A Newspaper Advertisement	M.	2.22	4.00	4.58	3.59	3.44	3.00	2.86	5.60
	S.D.	2.05	2.32	1.84	2.06	2.68	2.22	1.96	1.85
	R.	5	5	5	5	4	8	8	7
	N.	18	17	26	27	18	16	14	30
Determine Stock Turnover	M.	1.67	3.94	4.31	2.67	3.06	3.81	3.00	5.63
	S.D.	.84	2.59	2.19	2.32	2.39	2.26	2.35	2.09
	R.	8	6	7	7	6, 7	5	6, 7	6
	N.	18	16	26	27	18	16	14	30
Plan A Floor Layout	M.	2.50	3.81	4.19	2.37	3.06	3.25	4.29	5.17
	S.D.	2.26	2.51	2.30	2.12	2.34	2.57	2.46	1.76
	R.	4	7	8	8	6, 7	6, 7	5	8
	N.	18	16	26	27	18	16	14	30

Note: M = Mean, S.D. = Standard Deviation, R = Rank, Ag=Agriculture, N = valid observations for this item

Table 12 (cont'd)

Means, Standard Deviations, and Rank for Sale Skills Required for Employment in each of Seven Agribusiness Areas

Sales Skills		Ag. Production N=21	Ag. Supplies N=18	Ag. Sales and Service N=26	Ag. Finance N=27	Ag. Mechanics N=18	Manufacturing N=16	Horticulture N=14	Vocational Agriculture Instructors N=30
Possess/Product Knowledge	M.	4.89	7.18	7.58	5.93	6.72	6.19	7.79	7.70
	S.D.	3.03	2.51	1.79	3.05	2.05	2.69	1.63	1.64
	R.	1	1, 2	1	1	1	1	1	1
	N.	18	17	26	27	18	16	14	30
Composite Average	M.	2.69 [a]	5.31	5.45	3.78 [b]	4.07 [c]	4.24 [c]	4.97	6.24
	R.	7	2	1	6	5	4	3	

Note: M = Mean, S.D. = Standard Deviation, R = Rank, Ag. = Agriculture, N = valid observations for this item.
a = significantly different than horticulture, ag. supplies, ag. sales and service, and voc. ag. instructor.
b = significantly different than ag. supplies, ag. sales and service, and the vocational agriculture instructor
c = significantly different than the vocational agriculture instructors.

2. Close a Sale
   - Agricultural Production (2.67)

3. Select Advertising Media
   - Agricultural Production (2.11)
   - Agricultural Supplies (3.40)
   - Agricultural Finance (3.93)
   - Agricultural Mechanics (2.83)
   - Manufacturing (3.25)
   - Horticulture (3.00)

4. Plan/Create a Display
   - Agricultural Production (1.78)
   - Agricultural Finance (3.07)
   - Agricultural Mechanics (3.39)

5. Prepare a Newspaper Ad
   - Agricultural Production (2.22)
   - Agricultural Finance (3.59)
   - Agricultural Mechanics (3.44)
   - Manufacturing (3.00)
   - Horticulture (2.86)

6. Determine Stock Turnover
   - Agricultural Production (1.67)
   - Agricultural Supplies (3.94)
   - Agricultural Finance (2.67)
   - Agricultural Mechanics (3.06)
   - Manufacturing (3.81)
   - Horticulture (3.00)

7. Plan a Floor Layout
   - Agricultural Production (2.50)
   - Agricultural Supplies (3.81)
   - Agricultural Finance (2.37)
   - Agricultural Mechanics (3.06)
   - Manufacturing (3.25)

The vocational agriculture instructors rated the skill group identified as sales skills the highest (composite of 6.24) of all respondent groups. Composite scores of this skill group are reported below as determined by each agribusiness respondent area.

- Agricultural Sales and Service (5.45)
- Agricultural Supplies (5.31)
- Horticulture (4.97)
- Manufacturing (4.24)
- Agricultural Mechanics (4.07)

Agricultural Finance (3.78)
Agricultural Production (2.69)

The agribusiness respondents did not identify this group of sales skills as a requirement (7.0 or above) for employment in their agribusiness.

A Tukey post hoc test indicated differences among agribusiness respondents in sales skills required for employment in an agribusiness. The agricultural production respondents rating of sales skills required for employment was significantly lower than the ratings of the following respondent groups representing horticulture, agricultural supplies, agricultural sales and service, and the vocational agriculture instructors.

It was also observed that agricultural finance respondents indicated a significantly lower perception of the need for sales skills required for employment as perceived by the respondents representing agricultural supplies, agricultural sales and service and the vocational agriculture instructors. The agribusiness groups representing agricultural mechanics and manufacturing indicated a significantly lower perception of the sales skills required for employment when compared to the vocational agriculture instructor responses.

Data from five office equipment skills are presented in Table 13 by agribusiness respondents from seven different agribusiness areas. The five office equipment skills evaluated in this section include operating a computer, using a telephone, using a cash register, using a adding machine, and using a microfiche. The agribusiness respondents identified

Table 13

Means, Standard Deviations, and Rank for Office Equipment Skills Required for each of the Seven Agribusiness Areas

Office Equipment Skills		Ag. Production N=21	Ag. Supplies N=18	Ag. Sales and Service N=26	Ag. Finance N=27	Ag. Mechanics N=18	Manufacturing N=16	Horticulture N=14	Vocational Agriculture Instructors N=30
Operate Computer	M.	2.67	2.56	5.04	6.48	3.72	3.44	2.50	6.57
	S.D.	2.79	2.10	2.52	2.08	2.59	2.50	1.99	1.70
	R.	3	5	4	4	5	4	4	4
	N.	18	16	26	27	18	16	14	30
Use Telephone	M.	5.50	8.12	8.04	8.07	7.61	6.69	8.07	8.37
	S.D.	2.85	2.03	1.66	1.59	2.12	2.89	1.69	1.22
	R.	1	1	1	2	1	1	1	1
	N.	18	17	26	27	18	16	14	30
Use Cash Register	M.	2.56	7.41	6.85	3.78	4.33	4.06	7.43	7.63
	S.D.	2.77	2.67	2.41	3.12	3.48	3.32	2.59	1.33
	R.	4	3	3	5	4	3	3	3
	N.	18	17	26	27	18	16	14	30
Use Adding Machine	M.	5.33	8.00	7.85	8.15	7.44	6.19	7.50	7.67
	S.D.	2.81	1.84	1.74	1.46	2.01	2.69	1.87	1.42
	R.	2	2	2	1	2	2	2	2
	N.	18	17	26	27	18	16	14	30
Use Microfiche	M.	1.94	6.53	4.77	6.73	4.50	2.25	1.57	5.80
	S.D.	2.29	2.92	2.54	2.54	3.55	1.88	1.40	1.56
	R.	5	4	5	3	3	5	5	5
	N.	18	17	26	26	18	16	14	30
Composite Average	M.	3.60 [a]	6.52	6.51	6.64	5.52 [c]	4.53 [b]	5.41 [c]	7.21
	R.	7	2	3	1	4	6	5	

Note: M = Mean. S.D. = Standard Deviation, R = Rank, Ag. = Agriculture, N = valid observations for this item.
a = significantly different than horticulture, ag. mechanics, ag. sales and service, ag. supplies, ag. finance, voc. ag. instructors.
b = significantly different than ag. sales, ag. supplies, ag. finance, and voc. ag. instructors.
c = significantly different than vocational agriculture instructors.

the following skills as required (7.0 or above) skills for employment in their agribusiness.

1. Using the telephone
   - Agricultural Supplies (8.12)
   - Agricultural Sales and Service (8.04)
   - Agricultural Finance (8.07)
   - Agricultural Mechanics (7.61)
   - Horticulture (8.07)

2. Using the Cash Register
   - Agricultural Supplies (7.41)
   - Horticulture (7.43)

3. Using the Adding Machine
   - Agricultural Supplies (8.00)
   - Agricultural Sales and Service (7.85)
   - Agricultural Finance (8.15)
   - Agricultural Mechanics (7.44)
   - Horticulture (7.50)

The agribusiness area respondents identified the following skills as not required (3.99 or below) for employment in their agribusiness.

1. Operate a Computer
   - Agricultural Production (2.67)
   - Agricultural Supplies (2.56)
   - Agricultural Mechanics (3.72)
   - Manufacturing (3.44)
   - Horticulture (2.50)

2. Use the Cash Register
   - Agricultural Production (2.56)
   - Agricultural Finance (3.78)

3. Use a Microfiche
   - Agricultural Production (1.94)
   - Manufacturing (2.25)
   - Horticulture (1.57)

The vocational agriculture instructors rated the office equipment skill group higher (7.21) than other respondent groups in this study. Composite scores of this skill group are reported below as determined by each agribusiness respondent group.

Agricultural Finance (6.64)

Agricultural Supplies (6.52)
Agricultural Sales and Service (6.51)
Agricultural Mechanics (5.52)
Horticulture (5.41)
Manufacturing (4.53)
Agricultural Production (3.60)

The agribusiness respondents did not identify office equipment skills group as requirements for employment in their agribusiness.

A Tukey post hoc test indicated where differences exist in the perceptions of the need for office equipment skills required for employment in an agribusiness. The agricultural production respondents were observed to have significantly lower ratings than the following agribusiness groups: horticulture, agricultural mechanics, agricultural sales and service, agricultural supplies, agricultural finance and the vocational agriculture instructors.

It was also observed that the manufacturing respondents had a significantly lower composite score for office equipment skills required for employment than the following groups: agricultural sales and service, agricultural supplies, agricultural finance and the vocational agriculture instructors. Respondents from the agribusiness groups in horticulture and agricultural mechanics indicated a significantly lower perception of office equipment skills required for employment when compared to the vocational agriculture instructors.

Five communication skills listed in Table 14 were evaluated by agribusiness respondents from seven agribusiness areas. The communication skills which were selected for this study included the ability to: get along with people, speak to large groups, organize and present a demonstration, introduce yourself and others, and the ability

Table 14

Means, Standard Deviations, and Rank for Communication Skills Required for Employment in each of the Seven Agribusiness Areas

Communication Skills		Ag. Production N=21	Ag. Supplies N=18	Ag. Sales and Service N=26	Ag. Finance N=27	Ag. Mechanics N=18	Manufacturing N=16	Horticulture N=14	Vocational Agriculture Instructors N=30
Get Along With People	M.	7.55	8.33	8.08	8.26	8.39	7.50	8.86	8.77
	S.D.	1.96	1.91	1.60	1.48	.92	2.10	.36	.68
	R.	1	1	1	2	1	1	1	1
	N.	20	18	26	27	18	16	14	30
Speak to Large Groups	M.	3.00	4.59	5.00	5.19	4.17	4.56	5.00	6.47
	S.D.	2.38	2.35	1.33	1.82	2.66	1.86	1.52	1.87
	R.	4	5	5	5	5	5	5	5
	N.	19	17	26	27	18	16	14	30
Organize And Present A Demonstration	M.	2.26	5.06	5.04	5.41	4.61	4.63	5.14	6.63
	S.D.	1.79	2.51	1.78	1.82	2.77	2.22	1.66	1.83
	R.	5	4	4	4	4	4	4	4
	N.	19	17	26	27	18	16	14	30
Introduce Yourself and Others	M.	4.80	6.83	6.42	7.48	6.06	5.56	7.43	7.70
	S.D.	2.71	1.86	1.94	1.53	2.19	2.19	1.28	1.69
	R.	3	3	3	3	3	3	3	3
	N.	20	18	26	27	17	16	14	30
Talk To Customers	M.	5.10	8.22	7.62	8.30	7.12	6.38	8.14	8.50
	S.D.	2.47	1.70	1.70	1.49	2.03	2.42	1.23	1.01
	R.	2	2	2	1	2	2	2	2
	N.	20	18	26	27	17	16	14	30
Composite Average	M.	4.54 [a]	6.60	6.43	6.93	6.07 [b]	5.73 [b]	6.91	7.61
	R.	7	3	4	1	5	6	2	

Note: M = Mean, S.D. = Standard Deviation, R = Rank, Ag. = Agriculture, N. = valid observations for this item
a=significantly different than ag. sales and service, ag. supplies, horticulture, ag. finance, and voc. ag. instructor.
b=significantly different than vocational agriculture instructors.

to talk to customers. The agribusiness respondents identified the following skills as required (7.0 or above) for employment in their agribusiness.

1. The Ability to Get Along With People
   - Agricultural Production (7.55)
   - Agricultural Supplies (8.33)
   - Agricultural Sales and Service (8.08)
   - Agricultural Finance (8.26)
   - Agricultural Mechanics (8.39)
   - Manufacturing (7.50)
   - Horticulture (8.86)

2. The Ability to Introduce Yourself and Others
   - Agricultural Finance (7.48)
   - Horticulture (7.43)

3. The Ability to Talk to Customers
   - Agricultural Supplies (8.22)
   - Agricultural Sales and Service (7.62)
   - Agricultural Finance (8.30)
   - Agricultural Mechanics (7.12)
   - Horticulture (8.14)

The following agribusiness areas identified these skills as not required for employment in their agribusiness.

1. The Ability to Speak to Large Groups
   - Agricultural Production (3.00)

2. The Ability to Organize and Present a Demonstration
   - Agricultural Production (2.26)

The vocational agriculture instructors rated the communication skill group the highest (7.61) of all the respondent groups in this study. The composite scores of this skill group are reported below as determined by each agribusiness respondent group.

- Agricultural Finance (6.93)
- Horticulture (6.91)
- Agricultural Supplies (6.60)
- Agricultural Sales and Service (6.43)
- Agricultural Mechanics (6.07)
- Manufacturing (5.73)
- Agricultural Production (4.54)

The agribusiness respondent groups did not identify communication skills as a requirement for employment in their agribusiness, but scores were all in the "sometimes required" categories.

A Tukey post hoc test indicated differences in the perceptions for the need for communication skills as a requirement for employment in an agribusiness. The agricultural production respondents rated communication skills required for employment significantly lower than the following agribusiness groups: agricultural sales and service, agricultural supplies, horticulture, agricultural finance and the vocational agriculture instructors.

Table 15 provides information on three customer relation skills perceived to be important for employment in an agribusiness by respondents from seven different agribusiness respondent groups. The customer relation skills identified included the ability to recognize and help customers, the ability to handle complaints, and the ability to use product knowledge for customer relations. The agribusiness respondents identified the following skills as always required for employment in their agribusiness.

1. The Ability to Recognize and Help Customers
   - Agricultural Supplies (7.83)
   - Agricultural Sales and Service (7.65)
   - Agricultural Finance (7.82)
   - Horticulture (7.93)

2. The Ability to Handle Complaints
   - Agricultural Supplies (7.72)
   - Agricultural Finance (7.78)
   - Horticulture (7.21)

3. The Ability to Use Product Knowledge for Customer Relations
   - Agricultural Supplies (7.83)
   - Agricultural Sales and Service (7.77)
   - Agricultural Finance (7.52)

Table 15

Means, Standard Deviations, and Rank for Customer Relation Skills Required for each of the Seven Agribusiness Areas

Customer Relation Skills		Ag. Production N=21	Ag. Supplies N=18	Ag. Sales and Service N=26	Ag. Finance N=27	Ag. Mechanics N=18	Manufacturing N=16	Horticulture N=14	Vocational Agriculture Instructors N=30
Recognize/Help Customers	M.	4.58	7.83	7.65	7.82	6.59	5.81	7.93	7.97
	S.D.	2.76	1.95	1.65	1.57	2.58	2.86	1.44	1.16
	R.	2	1, 2	2	1	3	2	2	2
	N.	19	18	26	27	17	16	14	30
Handle Complaints	M.	4.26	7.72	6.96	7.78	6.77	5.75	7.21	7.60
	S.D.	2.88	2.02	1.71	1.60	2.31	2.82	1.85	1.22
	R.	3	3	3	2	2	3	3	3
	N.	19	18	26	27	17	16	14	30
Possess Product Knowledge	M.	5.68	7.83	7.77	7.52	7.53	6.13	8.14	8.30
	S.D.	2.81	1.98	1.68	2.10	1.51	2.71	1.46	1.06
	R.	1	1, 2	1	3	1	1	1	1
	N.	19	18	26	27	17	16	14	30
Composite Average	M.	4.84 [a]	7.79	7.46	7.71	6.96	5.90 [b]	7.76	7.96
	R.	7	1	4	3	5	6	2	

Note: M=Mean, S.D.=Standard Deviation, R=Rank, Ag.=Agriculture, N= valid observations from this item
a= significantly different than ag. mechanics, ag. sales and service, ag. finance, horticulture, ag. supplies, voc. ag. instructors.
b= significantly different than ag. finance, ag. supplies, and the vocational agriculture instructor.

Agricultural Mechanics (7.53)
Horticulture (8.14)

The vocational agriculture instructors rated the customer relation skill group higher (7.96) than other respondent groups. Composite scores of the customer relation skill group are reported by each agribusiness respondent area.

Agricultural Supplies (7.79)
Horticulture (7.76)
Agricultural Finance (7.71)
Agricultural Sales and Service (7.46)
Agricultural Mechanics (6.96)
Manufacturing (5.90)
Agricultural Production (4.84)

Four agribusiness respondent groups identified the customer relation skill group as a required (7.0 or above) set of skills for employment in their agribusiness. These agribusiness groups included Agricultural Supplies, Horticulture, Agricultural Finance, and Agricultural Sales and Service.

A Tukey post hoc test indicated that differences existed in the perceptions of the need for customer relation skills as a requirement for employment in an agribusiness. Respondents from agricultural production indicated a significantly lower rating in their perceptions of the need for customer relation skills with the following respondents: agricultural mechanics, agricultural sales and service, agricultural finance, horticulture, agricultural supplies and the vocational agriculture instructors.

It was also observed that the manufacturing respondents indicated a significantly lower rating of perceptions of the need for customer relation skills with the following groups: agricultural finance,

agricultural supplies and the vocational agriculture instructors.

The agribusiness employment skills were further categorized to illustrate the required skills and the five least required skills for each of the seven agribusiness respondent groups.

Only two required skills were reported by respondents from Agricultural Production. They included the ability to:

1. obtain a social security card (8.17)
2. get along with people (7.55)

The five skills least required for employment in Agricultural Production included the ability to:

1. determine stock turnover (1.67)
2. plan/create a display (1.78)
3. use a microfiche (1.94)
4. select advertising media (2.11)
5. prepare a newspaper ad (2.22)

Fifteen required skills were recognized by respondents in Agricultural Supplies. They included the ability to:

1. get along with people (8.33)
2. talk to customers (8.22)
3. count change (8.18)
4. use the telephone (8.12)
5. accept credit cards/checks (8.00)
6. use the adding machine (8.00)
7. possess product knowledge for customer relations (7.83)
8. recognize/help customers (7.83)
9. handle complaints (7.72)
10. use the cash register (7.41)
11. prepare a sales ticket (7.33)
12. complete an employment application (7.22)
13. close a sale (7.18)
14. possess product knowledge for a sales skill (7.18)
15. order and receive merchandise (7.06)

The five least required skills for employment in Agricultural Supplies included the ability to:

1. program a computer (1.77)
2. operate a computer (2.56)

3. use computer word processing skills (2.81)
4. calculate profit/loss (3.25)
5. calculate interest (3.35)

Twelve required skills for employment as reported by respondents in Agricultural Sales and Service included the ability to:

1. get along with people (8.08)
2. use the telephone (8.04)
3. obtain a social security card (8.00)
4. use an adding machine (7.85)
5. utilize product knowledge for customer relations (7.77)
6. recognize/help customers (7.65)
7. talk to customers (7.62)
8. prepare a sales ticket (7.62)
9. possess product knowledge for a sales skill (7.58)
10. complete a employment application (7.46)
11. use a cash register (7.41)
12. close a sale (7.15)

The five least required skills for employment in Agricultural Sales and Service included the ability to:

1. program a computer (2.35)
2. calculate profit/loss (3.73)
3. use computer word processing skills (3.89)
4. calculate interest (4.08)
5. plan a floor layout (4.19)

Ten required skills for employment as perceived by respondents in Agricultural Finance included the ability to:

1. talk to customers (8.30)
2. get along with people (8.26)
3. use the adding machine (8.15)
4. use the telephone (8.07)
5. recognize/help customers (7.82)
6. handle complaints (7.78)
7. calculate interest (7.67)
8. possess product knowledge for customer relations (7.52)
9. introduce yourself and others (7.48)
10. obtain a social security card (7.26)

The five least required skills for employment in Agricultural Finance included the ability to:

1. plan a floor layout (2.32)

2. determine stock turnover (2.67)
3. plan/create a display (3.07)
4. program a computer (3.30)
5. prepare a newspaper ad (3.59)

Seven required skills for employment as perceived by respondents in Agricultural Mechanics included the ability to:

1. obtain a social security card (8.89)
2. get along with people (8.39)
3. use the telephone (7.61)
4. utilize product knowledge for customer relations (7.53)
5. use the adding machine (7.44)
6. talk to customers (7.12)
7. complete a employment application (7.00)

The five least required skills for employment in Agricultural Mechanics included the ability to:

1. program a computer (2.56)
2. calculate profit/loss (2.67)
3. check a cash balance (2.78)
4. select advertising media (2.83)
5. determine stock turnover & plan a floor layout (3.06)

The three most required skills for employment as perceived by respondents in Agricultural Manufacturing included the ability to:

1. obtain a social security card (8.06)
2. get along with people (7.50)
3. complete an employment application (7.13)

The five least required skills for employment in Agricultural Manufacturing included the ability to:

1. use a microfiche (2.25)
2. calculate profit/loss (2.63)
3. program a computer (2.88)
4. prepare a newspaper ad (3.00)
5. calculate interest (3.06)

Sixteen required skills for employment as perceived by respondents in Horticulture included the ability to:

1. get along with people (8.86)
2. obtain a social security card (8.57)

3. talk to customers (8.14)
4. utilize product knowledge for customer relations (8.14)
5. use the telephone (8.07)
6. prepare a sales ticket (8.07)
7. recognize/help customers (7.93)
8. count change (7.86)
9. possess product knowledge for a sales skill (7.79)
10. figure sales tax (7.57)
11. use the adding machine (7.50)
12. use the cash register (7.43)
13. introduce yourself and others (7.43)
14. close a sale (7.29)
15. handle complaints (7.21)
16. accept credit cards/checks (7.07)

The five least required skills for employment in Horticulture included the ability to:

1. use the microfiche (1.57)
2. program a computer (2.07)
3. operate a computer (2.50)
4. computer word processing skills (2.57)
5. prepare a newspaper ad (2.86)

Agribusinesses which deal with customers or provide a customer service perceive the importance of agribusiness skills much higher than agribusinesses that deal with the production of a agricultural product. Agricultural supplies rated 15 skills as required for student employment. Agricultural sales and service identified 12 skills which they perceive as required for employment. Agricultural finance identified 10 skills which they perceive as required and horticulture respondents identified 16 skills which they perceive are required skills for employment in their agribusiness. These four agribusiness areas should be evaluated further to determine the job specific skills that these agribusinesses require.

4) Skills Required for Employment based on the Agribusiness Respondents' Level of Education

An independent T-test was used to compare the responses of each of

the 40 agribusiness skills identified based on the education level of the respondent. Group one represented respondents with a college education and group two represented respondents without a college education. The T-test reported that there was no significant difference ($p<.05$) between the two groups regarding perceptions of the importance of skills required for employment in an agribusiness.

5) Level of Education Required for Employment in a Nebraska Agribusiness

Education requirements for employment identified in Table 16 reports that 66% of the agribusiness respondents hire current high school graduates "sometimes" or "always". It was also observed that 67% of those surveyed reported that they "seldom" or "never" required a student employee to have obtained vocational agriculture instruction for employment in their business.

Fifty percent of the agribusiness respondents indicated that they "seldom" or "never" required postsecondary training for employment in their agribusiness.

6) Level of Education Required for Employment in each of Seven Agribusiness Occupational Areas

Frequencies and percentages calculated in Table 17 were used to to determine which agribusiness areas provide the highest percentage of employment opportunities for high school students. The data indicated that manufacturing and agricultural production provided the highest employment opportunity for high school graduates. The following agribusiness respondent groups hire high school graduates "always" or "sometimes".

Table 16

Level of Education Required for Employment in each of Seven Agribusiness Areas

Response	Hire High School Graduates		Voc. Ag. Required		Post Sec. Training	
	N	%	N	%	N	%
Always	3	2.1	6	4.3	13	9.3
Sometimes	90	64.3	35	25.0	50	35.7
Seldom	35	25.0	39	27.9	27	19.3
Never	9	6.4	55	39.3	43	30.7
Missing	3	2.1	5	3.6	7	5.0
Total	140	100	140	100.0	140	100.0

Note- Voc. Ag. = Vocational Agriculture, Post Sec. = Post Secondary

1. Manufacturing 81%
2. Agricultural Production 81%
3. Agricultural Supplies 78%
4. Agricultural Mechanics 67%
5. Agricultural Sales and Service 62%
6. Horticulture 57%
7. Agricultural Finance 48%

Perhaps agribusiness employment areas such as agricultural mechanics, agricultural sales and service, horticulture and agricultural finance do not hire as many high school graduates because their business may hire employees with more job specific skills. These skills may need to be identified to improve the opportunity for a vocational agriculture student to obtain employment in these agribusinesses.

Information contained in Table 18 identifies the respondents perceptions of a student possessing vocational agriculture instruction as a requirement for employment in their agribusiness. The following

Table 17

Frequencies and Percentages of Agribusinesses in Nebraska Which Hire Recent High School Graduates Based on each Agribusiness Occupational Area

Agribusiness Area		Always	Sometimes	Seldom	Never
Agricultural Production	f	0	17	1	2
N=20	%	0	81	4.8	9.5
Agricultural Supplies	f	2	12	2	1
N=17	%	11.1	66.7	11.1	5.6
Agricultural Sales and Service	f	0	16	10	0
N=26	%	0	61.5	38.5	0
Agricultural Finance	f	0	13	10	4
N=27	%	0	48.1	37.0	14.8
Agricultural Mechanics	f	0	12	5	1
N=18	%	0	66.7	27.8	5.6
Manufacturing	f	1	12	5	0
N=16	%	6.3	75	18.8	0
Horticulture	f	0	8	4	1
N=13	%	0	57.1	28.6	7.1
Composite Score	f	3	90	35	9
N=137	%	2	66	26	7

Note* f= frequencies, %= percentage of respondents, N= number of respondents

agribusiness area respondents rated vocational agriculture as "seldom" or "never" required for employment in their agribusiness.

1. Manufacturing 88%
2. Horticulture 86%
3. Agricultural Finance 70%
4. Agricultural Production 67%

Table 18

Frequencies and Percentages of Agribusinesses in Nebraska Which Require a Vocational Agriculture Background for Employment by Agribusiness Occupational Area

Agribusiness Area		Always	Sometimes	Seldom	Never
Agricultural Production	f	1	5	6	8
N=20	%	4.8	23.8	28.6	38.1
Agricultural Supplies	f	0	9	1	6
N=16	%	0	50	5.6	33.3
Agricultural Sales and Service	f	2	7	9	7
N=25	%	7.7	26.9	34.6	26.9
Agricultural Finance	f	0	8	10	9
N=27	%	0	29.6	37	33.3
Agricultural Mechanics	f	3	3	6	6
N=18	%	16.7	16.7	33.3	33.3
Manufacturing	f	0	2	2	12
N=16	%	0	12.5	12.5	75
Horticulture	f	0	1	5	7
N=13	%	0	7.1	35.7	50
Composite Score	f	6	35	39	55
N=135	%	4	26	29	41

Note* f= frequencies, %= percentage of respondents, N= number of respondents

5. Agricultural Mechanics 67%
6. Agricultural Sales and Service 61%
7. Agricultural Supplies 39%

Occupational areas of manufacturing and horticulture may have lower

needs for vocational agriculture training because of traditionally lower emphasis placed in those areas in Nebraska vocational agriculture programs. Sixty-one percent of the respondents from agricultural supplies rated vocational agriculture as "always" or "sometimes required" for employment in their agribusiness which may indicate the need for agriculturally trained students to fill jobs in this field.

Postsecondary education requirements for employment are listed in Table 19. The following agribusiness respondents rated postsecondary training as "always" or "sometimes" required for employment in their agribusiness occupation.

1. Agricultural Finance 82%
2. Agricultural Sales and Service 81%
3. Agricultural Supplies 40%
4. Agricultural Production 34%
5. Agricultural Mechanics 33%
6. Manufacturing 25%
7. Horticulture 22%

Postsecondary training maybe required for employment by agricultural sales and agricultural finance because of the job specific skills which the employees must perform.

Table 19

Frequencies and Percentages of Agribusinesses in Nebraska Which Require Postsecondary Training for Employment by each Agribusiness Occupational Area

Agribusiness Area		Always	Sometimes	Seldom	Never
Agricultural Production	f	3	3	6	8
N=20	%	14.3	14.3	28.6	38.1
Agricultural Supplies	f	0	5	3	8
N=16	%	0	27.8	16.7	44.4
Agricultural Sales and Service	f	3	17	2	3
N=25	%	11.5	65.4	7.7	11.5
Agricultural Finance	f	3	18	2	3
N=26	%	11.1	66.7	7.4	11.1
Agricultural Mechanics	f	4	2	4	8
N=18	%	22.2	11.1	22.2	44.4
Manufacturing	f	0	4	5	7
N=16	%	0	25	31.3	43.8
Horticulture	f	0	1	5	6
N=12	%	0	7.1	35.7	42.9
Composite Score	f	13	50	27	43
N=133	%	10	38	20	32

Note* f= frequencies, %= percentage of respondents, N= number of respondents

MAJOR FINDINGS

The major findings in this study include:

1. Sixty-one percent of the agribusiness respondents felt that enrollment in vocational agriculture was "important" but not a requirement for employment.
2. Eighty-two percent of the agribusiness respondents employed less than 50 employees and hired less than two new employees per year, indicating that opportunities for students to obtain employment in an agribusiness is limited.
3. Eighty-five percent of the agribusiness respondents have been in operation for at least 16 years. Fifty percent of the respondents did not have a college education.
4. Sixty-seven percent of the vocational agriculture instructors had seven or more years of experience and 77% of the instructors provided some agribusiness instruction currently in their vocational agriculture programs.
5. The vocational agriculture instructors identified 22 skills as required (7.0 or above) for employment in an agribusiness.
6. The agribusiness respondent group identified seven skills as required (7.0 or above on a 9 point scale), for employment in their agribusiness. These skills included the ability to: get along with people (8.24), obtain a social security card (7.98), use the telephone (7.69), use the adding machine (7.54), talk to customers (7.47), utilize product knowledge for customer relations (7.38), recognize/help customers (7.11).

7. Agribusiness respondents and vocational agriculture instructors agreed on 5 employment skills identified as being required skills for a student to possess for employment in an agribusiness. These skills included the ability to: get along with people, talk to customers, use the telephone, use product knowledge for customer relation and recognize/help customers.
8. Six skills were observed to have a significant difference at the .05 level and 30 skills had a significant difference at the .01 level between the perceptions of skills required for employment in a agribusiness by vocational agriculture instructors and agribusiness respondents.
9. Vocational agriculture instructors identified the ability to program a computer (3.63), as the only skill "seldom" or "never" required for employment in an agribusiness.
10. The agribusiness respondents identified 7 skills as "seldom" or "never" required (3.99 or below) for employment in an agribusiness. These skills included the ability to: use computer word processing skills (3.86), calculate profit/loss (3,82), program a computer (2.56), prepare a newspaper advertisement (3.52), select advertising media (3.45), plan a floor layout (3.38), and determine stock turnover (3.33).
11. Vocational agriculture instructors ranked customer relation skills (7.96), as the most required for employment in an agribusiness. Skills to obtain employment (7.77) ranked second as required for employment followed by communication skills (7.61), and office skills (7.20). Business skills (6.67), and sales skills

(6.24) rated sometimes required (4.0 to 6.99 on a 9 point scale) for employment in an agribusiness.

12. The agribusiness respondents identified customer relation skills (6.96), as the most required skill for employment in an agribusiness. Communication skills (6.24) ranked second in importance followed by employment skills (5.93), office equipment skills (5.71), business skills (4.88), and sales skills (4.40). The agribusiness respondents did not identify a set of employment skills which they perceived were required (7.0 or above) for employment in their agribusiness.

13. The only two required skills identified by respondents in Agricultural Production included the ability to:

    1. obtain a social security card (8.17)
    2. get along with people (7.55)

14. The 14 required skills for employment as identified by respondents in Agricultural Supplies included the ability to:

    1. get along with people (8.33)
    2. talk to customers (8.22)
    3. count change (8.18)
    4. use the telephone (8.12)
    5. accept credit cards/checks (8.00)
    6. use the adding machine (8.00)
    7. possess product knowledge for customer relations (7.83)
    8. recognize/help customers (7.83)
    9. handle complaints (7.72)
    10. use cash register (7.41)
    11. prepare a sales ticket (7.33)
    12. complete an employment application (7.22)
    13. close a sale (7.18)
    14. possess product knowledge for a sales skill (7.18)
    15. order and receive merchandise (7.06)

15. The 12 required skills for employment as identified by respondents in Agricultural Sales and Service included the ability to:

    1. get along with people (8.08)
    2. use the telephone (8.04)
    3. obtain a social security card (8.00)
    4. use an adding machine (7.85)
    5. utilize product knowledge for customer relations (7.77)
    6. recognize/help customers (7.65)
    7. talk to customers (7.62)
    8. prepare a sales ticket (7.62)
    9. possess product knowledge for a sales skill (7.58)
    10. complete an employment application (7.46)
    11. use a cash register (7.41)
    12. close a sale (7.15)

16. The ten required skills for employment in Agricultural Finance identified by respondents include the ability to:

    1. talk to customers (8.30)
    2. get along with people (8.26)
    3. use the adding machine (8.15)
    4. use the telephone (8.07)
    5. recognize/help customers (7.82)
    6. handle complaints (7.78)
    7. calculate interest (7.67)
    8. possess product knowledge for customer relations (7.52)
    9. introduce yourself and others (7.48)
    10. obtain a social security card (7.26)

17. The seven required skills for employment identified by respondents in Agricultural Mechanics included the ability to:

    1. obtain a social security card (8.89)
    2. get along with people (8.39)
    3. use the telephone (7.61)
    4. utilize product knowledge for customer relations (7.53)
    5. use the adding machine (7.44)
    6. talk to customers (7.12)
    7. complete a employment application (7.00)

18. The three required skills for employment identified by respondents in Agricultural Manufacturing included the ability to:

    1. obtain a social security card (8.06)
    2. get along with people (7.50)
    3. complete an employment application (7.13)

19. The sixteen required skills for employment identified by respondents in Horticulture include the ability to:

    1. get along with people (8.86)
    2. obtain a social security card (8.57)
    3. talk to customers (8.14)
    4. utilize product knowledge for customer relations (8.14)
    5. use the telephone (8.07)
    6. prepare a sales ticket (8.07)
    7. recognize and help customers (7.93)
    8. count change (7.86)
    9. possess product knowledge for a sales skill (7.79)
    10. figure sales tax (7.57)
    11. use adding machine (7.50)
    12. use cash register (7.43)
    13. introduce yourself and others (7.43)
    14. close a sale (7.29)
    15. handle complaints (7.21)
    16. accept credit cards/checks (7.07)

20. Composite scores of all skill areas indicated that selected agribusiness respondents valued student employment skills differently.

    1. Agricultural Supplies (6.30)
    2. Agricultural Sales and Service (6.25)
    3. Agricultural Finance (6.16)
    4. Horticulture (6.02)
    5. Agricultural Mechanics (5.45)
    6. Manufacturing (5.02)
    7. Agricultural Production (4.06)

21. Customer relation skills was the only skill area reported as required (7.0 or above) for employment in some agribusiness areas. Those areas included agricultural supplies (7.80), agricultural sales and service (7.46), agricultural finance (7.70) and horticulture (7.76).

22. The vocational agriculture instructors rated most agribusiness skill groups significantly higher ($p.<01$) than the agribusiness respondents representing each of seven agribusiness areas.

23. Significant differences among agribusiness respondent groups were observed consistently throughout the reporting of skills required for employment in each of seven occupational areas.
24. Education requirment data inducated that 64% of the agribusiness respondents hire current high school graduates "sometimes".
25 Sixty-seven percent of the agribusiness respondents reported that they "seldom" or "never" require a student employee to have been enrolled in vocational agriculture for employment in their agribusiness.
26. Manufacturing and agricultural production respondents provided the highest employment opportunity for high school graduates.
27. Manufacturing (88%) and Horticulture (86%) respondents rated vocational agriculture as "seldom" or "never" required for employment in their agribusiness.
28. Sixty-one percent of the respondents from agricultural supplies rated vocational agriculture as "always" or "sometimes" required for employment in their agribusiness.
29. Postsecondary training is required for employment primarily in agricultural finance and agricultural sales and service.

Hypothesis Test Results

Based on the findings presented in this study, the following conclusions were drawn:

Hypothesis #1

- There is no significant difference in the skills required for employment in an agribusiness as perceived by Nebraska agribusiness managers and vocational agriculture instructors.

Conclusion: Reject the null hypothesis

Rationale: Six skills were observed to have a significant difference at the .05 level and 30 skills had a significant difference at the .01 level between the perceptions of skills required for employment in an agribusiness by vocational agriculture instructors and agribusiness respondents. The vocational agriculture instructors rated all six agribusiness skill groups significantly higher ($p<.01$) than the agribusiness respondents.

Hypothesis #2

-There is no significant difference in the skills required for employment in an agribusiness based on the agribusiness respondents' level of education.

Conclusion: The null hypothesis is accepted.

Rationale: An independent T-test was used to compare the responses of each of the 40 agribusiness skills identified based on the education level of the respondent. Group one represented respondents with a college education and group two represented respondents without a college

education. The T-test reported that there was no significant difference ($p<.05$) between the two groups regarding perceptions of the importance of skills required for employment in an agribusiness.

Hypothesis #3

- There is no significant difference in the skills required for employment in each of seven occupational areas of agriculture as perceived by Nebraska agribusiness managers.

Conclusion: Reject the null hypothesis

Rationale: Significant differences among agribusiness respondent groups were observed consistently throughout the reporting of skills required for employment in each of seven agribusiness occupational areas.

SUMMARY

The primary purpose of this study was to identify agribusiness skills which were required for entry level employment by Nebraska agribusinesses as perceived by Nebraska vocational agriculture instructors and agribusiness persons.

The population for this study consisted of all 128 secondary vocational agriculture instructors in Nebraska and the agribusinesses serving agriculture in the communities which offer vocational agriculture. Three vocational agriculture instructors were randomly selected from each of twelve NVAA districts in Nebraska. The vocational agriculture instructors were asked to identify names and addresses of seven agribusinesses in their community which represent one of each of the following agribusiness areas: production agriculture, agricultural supplies, agricultural sales and service, agricultural finance, agricultural mechanics, manufacturing, and horticulture.

The final sample used in the study consisted of 36 vocational agriculture instructors and 180 agribusiness persons.

The MAVCC curriculum guide entitled Employment in Agriculture (1984) served as the primary source for determining the agribusiness competency skills used in this study. After a thorough review, 40 specific competency skills were identified and listed for further evaluation.

A mailed survey was used to collect the data for the study. All randomly selected vocational agriculture instructors and identified agribusiness managers received a questionnaire.

The 36 vocational agriculture instructors returned 31 completed forms and provided a survey return rate of 86 percent. The 180 agribusiness managers surveyed returned a total of 140 completed surveys which provided 78 percent return rate for the sample population.

When evaluating the rated skills the following guidelines were established: A score of (1 to 3.99) identified skills that were "seldom" to "never" required for employment in an agribusiness. A score of (4 to 6.99) identified skills that were "sometimes required" and a score of (7 or above) identified skills that were "always required" for student employment in an agribusiness.

Means, standard deviations, and analysis of variance were computed for each skill to determine the importance of each skill as a requirement for employment in an agribusiness. Frequency distributions and percentages were used to rank responses to demographic questions and to report their relationship to the study. The ANOVA & Tukey post hoc test was used to reveal the differences among specific groups for both demographic and agribusiness skill data.

Demographic information reported that the agribusiness respondents were experienced in their job and the businesses which were surveyed had been well established. Employment information from Nebraska agribusiness managers indicated that most of the agribusinesses employed less than ten employees and the new employment opportunities for students is limited.

Demographic information reported by the vocational agriculture instructor indicated that the majority of instructors surveyed had seven or more years of teaching experience. The majority of communities were large enough to provide opportunities for employment for students.

Seventy-seven percent of the vocational agriculture instructors provided agribusiness instruction in their program curriculum. Fifty-two percent of the instructors had a copy of the MAVCC curriculum guide.

The vocational agriculture instructors identified 22 skills as required (7.0 or above) for employment in a Nebraska agribusiness. The agribusiness respondents identified 7 skills as required, (7.0 or above) for employment in an agribusiness.

Agribusiness respondents and vocational agriculture instructors agreed on 5 of the top 10 employment skills selected as being required skills for a student to possess for employment in an agribusiness. These skills included the ability to: get along with people, complete an employment application, talk to customers, use the telephone, use product knowledge for customer relations and recognize/help customers.

The major difference in the perception of the vocational agriculture instructors and the agribusiness respondents was the degree at which the skills were rated by both groups. Vocational agriculture instructors consistently rated skills significantly higher than the agribusiness respondent group. Composite scores were evaluated for each of the major groups of agribusiness skills identified in this study. The vocational agriculture instructor ranked customer relation skills (7.96) as the most required (7.0 or above on a 9 point scale), for employment in a agribusiness. Skills to obtain employment (7.77), ranked second as required for employment followed by communication skills (7.61), and office skills (7.20). Business skills (6.67), and sales skills (6.24), rated sometimes required (4.0 to 6.99) for employment in an agribusiness.

The agribusiness respondents also identified customer relation skills (6.96) as the most required skill for employment in an agribusiness. Communication skills (6.24), ranked second in importance followed by skills to obtain employment (5.93), office equipment skills (5.71), business skills (4.88), and sales skills (4.40). The agribusiness respondents did not identify a set of employment skills which they perceived were required (7.0 or above) for employment in their agribusiness.

All 6 agribusiness skill areas identified a significant difference of ($p<.01$) between vocational agriculture instructors and the agribusiness managers perceptions of skills required for employment.

The agribusiness managers response to the 40 agribusiness skills suggest that the agribusiness skills identified in this study are of less value to the students because the skills are not required (6.99 or below) by the employer. The composite scores indicated that most agribusiness skills are sometimes required (4.0 to 6.99), which indicates that the perceptions of the agribusiness respondents may differ according to the type of agribusiness represented. This data was further analyzed to determine the agribusiness respondents perception of skills required for employment by each of the seven agribusiness areas identified in this study.

Agribusiness managers rated skills required for employment in an agribusiness based on the agribusiness occupational area which their business represents. The seven agribusiness areas surveyed in this portion of the study included agricultural production (N=21), agricultural supplies (N=18), agricultural sales and service (N=26),

agricultural finance (N=27), agricultural mechanics (N=18), manufacturing (N=16), and horticulture (N=14).

Agribusinesses which deal with customers on a daily basis perceived the importance of agribusiness skills much higher than agribusinesses that deal with the production of an agricultural product. Respondents in agricultural supplies rated 15 skills as required (7.0 or above on a 9 point scale) for student employment in their agribusiness. Respondents in agricultural sales and service identified 12 skills required for employment. Agricultural finance managers identified 10 skills as required and horticulture respondents identified sixteen skills as required skills for employment in their agribusiness. These four agribusiness areas should be evaluated further to determine the job specific skills which these agribusinesses require.

Four agribusiness respondent groups identified customer relation skills as the only agribusiness skill area required for employment in an agribusiness in Nebraska. They agribusinesses included:

Agricultural Supplies (7.80)
Agricultural Sales and Service (7.46)
Agricultural Finance (7.70)
Horticulture (7.76)

Composite scores of all skill areas indicate that agribusiness areas valued employment skills differently.

1. Agricultural Supplies (6.30)
2. Agricultural Sales and Service (6.25)
3. Agricultural Finance (6.16)
4. Horticulture (6.02)
5. Agricultural Mechanics (5.45)
6. Manufacturing (5.02)
7. Agricultural Production (4.06)

Data regarding education requirements for employment indicated that 64% of the agribusiness respondents hire current high school graduates only "sometimes". Sixty-seven percent of the agribusiness respondents indicated they "seldom" or "never" require a student employee to have been enrolled in a vocational agriculture program prior to employment in their business.

Postsecondary training required by agribusiness respondents indicated that 50% of those surveyed "seldom" or "never" require postsecondary training for employment in their agribusiness.

The following agribusiness respondent groups hire recent high school graduates "always" or "sometimes".

1. Manufacturing 81%
2. Agricultural Production 81%
3. Agricultural Supplies 78%
4. Agricultural Mechanics 67%
5. Agricultural Sales and Service 62%
6. Horticulture 57%
7. Agricultural Finance 48%

The following agribusiness area respondents rated vocational agriculture as "seldom" or "never" required for employment in their agribusiness.

1. Manufacturing 88%
2. Horticulture 86%
3. Agricultural Finance 70%
4. Agricultural Production 67%
5. Agricultural Mechanics 67%
6. Agricultural Sales and Service 61%
7. Agricultural Supplies 39%

The following agribusiness areas rated postsecondary training as "always" or "sometimes" required for employment in their agribusiness.

1. Agricultural Finance 82%
2. Agricultural Sales and Service 81%
3. Agricultural Supplies 40%
4. Agricultural Production 34%
5. Agricultural Mechanics 33%
6. Manufacturing 25%
7. Horticulture 22%

Conclusions

The following conclusions were drawn from the findings of this study:

1. Employment skills and competencies currently provided in instructional materials used in Nebraska vocational agriculture programs are, for the most part, rated as "sometimes required" or "not required" for employment in an agribusiness as perceived by agribusiness managers.
2. Agribusiness managers rated skills consistently lower and do not require as many skills to gain employment when compared to the vocational agriculture instructors.
3. Customer relation skills and communication skills are the most required skill categories identified by Nebraska agribusiness managers.
4. Agricultural Sales and Service, Agricultural Supplies, Agricultural Finance, and Horticulture respondents identified more skills as required for employment in an agribusiness than respondents from Agricultural Mechanics, Manufacturing, and Agricultural Production.
5. Agribusiness managers were aware of the vocational agriculture program, but did not rely on vocational agriculture programs as a source of new employees.
6. Nebraska agribusiness firms tend to be small in size and hire few employees per year, indicating less employment opportunities for agricultural graduates.

7. Agricultural Supplies, Agricultural Sales and Service, Agricultural Finance and Horticulture respondents rated the customer relation skill area as the only agribusiness area required for employment in their agribusiness.
8. Agricultural Production and Manufacturing respondents identified the least amount of required skills for employment in their agribusiness. Employment opportunities for high school graduates in manufacturing and agricultural production is perceived to be higher than in other agribusiness areas.
9. The majority of respondents indicated that enrollment in vocational agriculture is "seldom" or "never" required for employment in their agribusiness. Postsecondary training is usually required for employment in agricultural sales and service and agricultural finance.

Recommendations

As a result of the conclusions drawn from this study the following actions were recommended:

1. Curriculum materials used to provide agribusiness instruction in Nebraska should be reviewed and updated to eliminate inappropriate materials. Required employment skills should be identified and instructional materials developed to meet the needs of the agribusiness employer. Agribusiness persons and vocational agriculture instructors need to work cooperatively in this task.
2. Vocational agriculture instructors should identify employment needs of the agribusinesses in their community and provide instruction to meet those needs.

3. Vocational agriculture instructors and local agribusiness persons should promote opportunities for students to improve their communication skills.
4. Agribusiness curriculum materials need to be emphasized in the following agribusiness areas: Agricultural Sales and Service, Agricultural Supplies, Agricultural Finance, and Horticulture.
5. Vocational agriculture instructors need to work closely with local agribusiness managers to identify skills required for employment, provide opportunities for the placement of students, and to inform local agribusiness persons about potential benefits of vocational agriculture training.
6. Vocational agriculture instructors should provide the students opportunities to visit various types and sizes of agribusinesses both within and outside their own communities in order to evaluate future career opportunities.
7. Customer relation skills and communication skills should be taught in all vocational agriculture programs.
8. Career objectives should be identified early to provide the vocational agriculture student the greatest opportunity for agribusiness skill development prior to graduation. Specific skills needed for agribusiness occupations should be identified for use in planning and conducting agribusiness training for both classroom instruction and Supervised Occupational Experience Programs.

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BIOGRAPHICAL SKETCH OF THE AUTHOR

David Ray Spotanski was born on June 16, 1958 in Loup City Nebraska. My parents, Mr. and Mrs. Floyd Spotanski have owned and operated a diversified crop and livestock operation for the past 50 years. I am the youngest of a family of ten children which include 4 brothers and 5 sisters.

I received my Bachelor of Science degree in Animal Science and Agricultural Education in 1981. After completing my college education I taught vocational agriculture in the Emerson-Hubbard Community High School during the years of 1981-1986. The most memorable years of my career have been my experiences as a vocational agriculture instructor and FFA advisor. I feel that obtaining and providing an education is a rewarding and personally fulfilling experience.

My future plans are to continue my education at Iowa State this fall and obtain a Ph.D. in Agricultural Education. I would like to extend a sincere appreciation to my family for taking a personal interest and providing encouragement when needed. I would especially like to thank my mom, sister Pat, and brother Ron for their guidance and their positive attitudes as I progress forward in my career.

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As I complete the final stages of my masters program, I can reflect on the many opportunities and challenges that have confronted me as I proceed forward in my professional career. Seven years ago I began a career in vocational agriculture and have had the opportunity to grow personally, professionally and have developed friendships and collected memories that will remain with me for the rest of my life.

I would like to thank Dr. Leverne Barrett for his friendship and guidance during the five years which I taught vocational agriculture at Emerson-Hubbard and during this past year as I completed my masters program.

To Dr. Osmund Gilbertson I would like to extend my appreciation for providing me the opportunity and encouragement to set and reach new goals in agricultural education.

I would like to extend my appreciation to Xenia Ceville, Mike Adelaine and Dr. David Agnew for your friendship and words of encouragement. I know that your careers will be filled with many new opportunities and challenges.

To Dr. Rick Foster I extend a very special thank you for challenging me and taking an interest in my career. I appreciate the extra time and effort that you have provided and know that your efforts will contribute to future success.

Many others have contributed to the success of my program and for that I am grateful. Thank you to the other staff members, graduate students and support staff for making my final year at the University of Nebraska enjoyable.

APPENDIX A

Identification of Agribusiness Respondents

Oct. 27, 1986

Dear Mr. Wheeldon:

Increased emphasis has been placed on incorporating Agribusiness Instruction into the local Vocational Agriculture programs in Nebraska. In order for us to identify areas of curriculum which can be incorporated or improved we need your help to identify Agribusiness employment opportunities in your area.

Our goal is to determine what competencies should be taught to prepare Vocational Agriculture students for a career in Agribusiness based on the employment opportunities in Nebraska.

I have enclosed a list of six areas of employment in Agribusiness and the criterion for their selection. I would appreciate your help in identifying those Agribusinesses in your community which provide employment in each area and returning the completed form in the return envelope by Nov. 1.

The success of this project is dependant upon the participants and you have been selected because of your experience and dedication for the continued growth of Vocational Agriculture. We will be sending out another brief questionnaire in about two weeks and would appreciate your prompt reply.

Thankyou for your time.
Sincerely;

David R. Spotanski
Graduate

Dr. Rick Foster
Associate Professor

Please use the following criteria in identifying Agribusinesses in your community.

1. The Employer must employ at least ten people
2. The business must be agriculturally related
3. The business must provide employment opportunities for secondary or postsecondary graduates of Agriculture.

List the name, mailing address and phone number of one business in your community for each of the agribusiness occupations listed below. If there is not an agribusiness for a specific occupation in your community that fits the required criteria check the blank _____not available in our community.

1) Production Agriculture-(farm or ranch placement)
This Agribusiness should be producing a product
Name of Business_____
Mailing Address_____
Phone Number _____
_____not available in our community

2) Agricultural Supplies-(hardware store, retail store)
Name of Business_____
Mailing Address_____
Phone Number _____
_____not available in our community

3) Agricultural Sales and Service-
(COOP, service station, grain elevator, implement dealer).

Name of Business_____
Mailing Address_____
Phone Number_____
_____ not available in our community

4) Agricultural Finance-(Bank, Credit Unions, Loan company, Farm consultants)
Name of Business_____
Mailing Address_____
Phone Number _____
_____ not available in our community

5) Agricultural Mechanics-(welding, repair and maintenance, electrician, construction)
(do not include manufacturing products)
Name of Business_____
Mailing Address_____
Phone Number _____
_____not available in our community

6) Manufacturing- (meat processing, food processing, machine manufacturing)
(This agribusiness must be manufacturing a agriculture product or a product used in Agriculture.)
Name of Business_____
Mailing Address_____
Phone Number _____
_____not available in our community

7) Horticulture- (greenhouses, lawn and garden care, retail, wholesale)
Name of Business _____
Mailing Address_____
Phone Number _____
_____not available in our community

Thankyou for your time and cooperation. Please place the completed form in the return envelope and mail.

APPENDIX B

Agribusiness and Vocational Agriculture Instructor Questionnaire

University of Nebraska Lincoln
Institute of Agriculture and Natural Resources

Agricultural Education Department
302 Agricultural Hall
East Campus
Lincoln, NE 68583-0709
Phone (402) 472-2807

March 3, 1987

Dear Agribusiness Personnel Director:

The Department of Agricultural Education at the University of Nebraska is striving to improve and up-date their curriculum materials used to prepare high school students for employment in Nebraska agribusinesses.

In order to more effectively prepare students to meet these job requirements, we need your help to identify those areas which you consider to be required job skills for employment in your agribusiness.

We have been in contact with the Vocational Agriculture Instructor in your community. He has suggested that you may be one of the most qualified people to help gather the needed information. We also believe that since you are directly involved in agriculture we have a common interest in preparing a better employee for this and the next generation in agriculture.

Enclosed you will find a two-part survey. Part One consists of some general questions about your business and Part Two consists of a list of various job skills to evaluate. Our goal is to determine what type of job skills are most required for employment in the agribusinesses of Nebraska.

We realize that some skills on the survey may not be appropriate for your business. However we would appreciate your response to each item on the questionnaire. Your response is very important. We feel that you as a professional agribusiness person are the most qualified to identify these job skills. All data will be treated as group data and will be used for program development.

Please return the questionnaire by March 12, in the postage paid envelope provided.

Sincerely,

David R. Spotanski
Instructor

Dr. Rick Foster
Associate Professor

Survey #_____

AGRIBUSINESS COMPETENCY SURVEY 113

Thank you for taking time to assist us in gathering information about employment opportunities and requirements for employment in Nebraska agribusinesses.

This survey is divided into two parts:

PART I: Includes some general questions about your employment requirements

PART II: Contains a list of job skills which are to be rated according to your opinion as to their importance for employment in your agribusiness.

PART I:

1. Please identify your position in the business.

_____

2. What area of Agribusiness does your business primarily represent? Check the one area that best fits the description of your business. Examples of each have been provided.

a)____ Production Agriculture (farm or ranch)
b)____ Agricultural Supplies (hardware and retail store)
c)____ Agricultural Sales and Service (service station, grain elevator, implement dealer)
d)____ Agricultural Finance (bank, credit unions, PCA, farm financial consultants)
e)____ Agricultural Mechanics (welding, machinery repair and maintenance, electrician, construction, etc.) Note: This section does not include manufacturing.
f)____ Manufacturing (meat processing, food processing, machine manufacturing)
g)____ Horticulture (lawn and garden care, floriculture, landscaping service, greenhouse, etc.)

3. How many years has your business been in operation? (Check one)

____ 1-3 years ____ 4-6 years ____ 7-9 years
____10-12 years ____13-15 years ____16 + years

4. How long have you been in your current position? (Check one)

____1-3 years ____4-6 years ____7-9 years
____10-12 years ____13-15 years ____16 + years

5. How many people are employed in the business? (Check one)
   ____Less than 10 ____10-49 ____50-100 ____over 100

6. How many new employees are hired per year? (Check one)

   ____ 0 ____1-2 ____3-4 ____5-6 ____7 or more

7. Are first year high school graduates hired? (Check one)

   ____Always ____Sometimes ____Seldom ____Never

8. Are you aware of the purpose of a Vocational Agriculture high school program? (Check one) ____Yes ____No

9. Do you require employees that you hire to have a high school Vocational Agriculture background for employment in your agribusiness? (Check one)

   ____Always ____Sometimes ____Seldom ____Never

10. Do you require your employees to have any postsecondary training in agriculture? (Check one)

    ____Always ____Sometimes ____Seldom ____Never

11. In your opinion, how would you rate the benefit to a student for enrolling in Vocational Agriculture in high school? (Check one)

    ____Essential for employment
    ____Very important
    ____Important but not required
    ____Unimportant
    ____No opinion, because I do not know enough about the program

12. Are you a college graduate? (Check one) ____Yes ____No

13. If you answered yes to #12 what was your major field of study?

    _____

14. Were you enrolled in Vocational Agriculture in High School? (Check one) ____Yes ____No

15. How many people are employed in your agribusiness in: (primary employment responsibility only)

    ____Management
    ____Sales
    ____Office work
    ____Stocking and Inventory maintenance
    ____Repair and maintenance of buildings and equipment
    ____Production worker
    ____General laborer
    ____Other: please specify_____

PART II: When you hire new employees, what skills do you require?
In this section, skills are identified that may be important in preparing students for employment in an agribusiness. Please rate the following based on your best judgement, using the following scale.

1	2	3	4	5	6	7	8	9
Not Required		Seldom Required		Sometimes Required		Required		Always Required

Example: To what degree are the following skills required for a student to gain employment on a dairy farm?

How to trim hooves	1	2	3	4	5	6	7	8	9
How to select good quality hay	1	2	3	4	5	6	7	8	9
Heat detection	1	2	3	4	5	6	7	8	9
Good sanitation skills	1	2	3	4	5	6	7	8	9
Mastitis detection and treatment	1	2	3	4	5	6	7	8	9

This section contains a list of skills which may be important employment skills for an agribusiness. Please rate each skill using the rating scale above.

1. To what degree are the following jobs skills required for a student to obtain employment in your Agribusiness.

Good interviewing techniques	1	2	3	4	5	6	7	8	9
Writing a resume	1	2	3	4	5	6	7	8	9
Writing a letter of application	1	2	3	4	5	6	7	8	9
Completing an employment application	1	2	3	4	5	6	7	8	9
Obtaining a social security card	1	2	3	4	5	6	7	8	9
Determining take home pay	1	2	3	4	5	6	7	8	9

1	2	3	4	5	6	7	8	9
Not Required		Seldom Required		Sometimes Required		Required		Always Required

2. To what degree are the following business skills required to obtain employment in your agribusiness?

Check daily cash balances	1	2	3	4	5	6	7	8	9
Count change	1	2	3	4	5	6	7	8	9
Balance cash register receipts	1	2	3	4	5	6	7	8	9
Figure sales tax	1	2	3	4	5	6	7	8	9
Calculate a profit and loss statement	1	2	3	4	5	6	7	8	9
Calculate percentages	1	2	3	4	5	6	7	8	9
Calculate discounts	1	2	3	4	5	6	7	8	9
Prepare a sales ticket	1	2	3	4	5	6	7	8	9
Accept credit cards and checks	1	2	3	4	5	6	7	8	9
Calculate interest	1	2	3	4	5	6	7	8	9
Order and receive merchandise	1	2	3	4	5	6	7	8	9
Complete a purchase order	1	2	3	4	5	6	7	8	9
Have computer word processing skills	1	2	3	4	5	6	7	8	9
Program a computer	1	2	3	4	5	6	7	8	9

3. To what degree are the following sales skills required to obtain employment in your agribusiness?

Maintain inventory	1	2	3	4	5	6	7	8	9
Close a sale	1	2	3	4	5	6	7	8	9
Select advertising media	1	2	3	4	5	6	7	8	9
Plan and create a display	1	2	3	4	5	6	7	8	9
Prepare a newspaper advertisement	1	2	3	4	5	6	7	8	9

1 Not Required	2	3 Seldom Required	4	5 Sometimes Required	6	7 Required	8	9 Always Required

Determine stock turnover rates	1	2	3	4	5	6	7	8	9
Plan a floor layout	1	2	3	4	5	6	7	8	9
Have general product knowledge	1	2	3	4	5	6	7	8	9

4. To what degree are the following <u>office equipment skills</u> required to obtain employment in your business?

Operate a microcomputer	1	2	3	4	5	6	7	8	9
Use the telephone properly	1	2	3	4	5	6	7	8	9
Use a cash register	1	2	3	4	5	6	7	8	9
Use an adding machine	1	2	3	4	5	6	7	8	9
Use the micro-fiche system	1	2	3	4	5	6	7	8	9

5. To what degree are the following <u>communication skills</u> required for employment in your agribusiness?

Ability to get along with people	1	2	3	4	5	6	7	8	9
Ability to speak to large groups	1	2	3	4	5	6	7	8	9
Ability to organize and present a demonstration	1	2	3	4	5	6	7	8	9
Ability to introduce yourself and others properly	1	2	3	4	5	6	7	8	9
Ability to talk to customers	1	2	3	4	5	6	7	8	9

1	2	3	4	5	6	7	8	9
Not Required		Seldom Required		Sometimes Required		Required		Always Required

6. To what degree are the following customer relation skills required for employment in your agribusiness?

Ability to recognize and help different types of customers	1	2	3	4	5	6	7	8	9
Ability to handle complaints and adjustments	1	2	3	4	5	6	7	8	9
General product knowledge	1	2	3	4	5	6	7	8	9

Thank you for taking the time to help us identify important agribusiness job skills for our curriculum usage. Your cooperation is greatly appreciated.

*****Please return the completed survey in the postage paid envelope provided by Mar. 6, 1987.

Return to: David R. Spotanski
University of Nebraska
Agricultural Education
300 Ag Hall
Lincoln, NE 68583

University of Nebraska Lincoln
Institute of Agriculture and Natural Resources

Agricultural Education Department
302 Agricultural Hall
East Campus
Lincoln, NE 68583-0709
Phone (402) 472-2807

February 23, 1987

Dear Vocational Agriculture Instructor:

Thank you for the quick response you provided in identifying Agribusinesses in your community. In order to complete this study we need your help with one more section. We have included a list of Agribusiness skills and need your help in rating them based on their importance for a student to possess for employment in an Agribusiness.

Enclosed please find a three-part survey. Part One consists of general questions about your Voc. Ag. Department, Part Two consists of a list of various job skills, and Part Three provides you the opportunity to assess your own comfort in teaching those areas of agribusiness. Our goal in Part I and II is to determine what type of job skills are considered important by both Agribusiness personnel and Vocational Agriculture Instructors. The purpose of Part III is to evaluate the level of competence you feel you possess in various areas of agribusiness.

We have also included a brief survey for your students. In this section we want to identify those agribusiness skills which students would like to possess following graduation. We hope that this information will also assist you in developing your Agribusiness program. In appreciation for your cooperation we would like to send you the tabulated responses of your students and a summary of the findings of the overall study.

Please read the specific directions to the students to help eliminate misunderstandings and to improve the value of the study. We have tried to include enough surveys for all your students, but if we did not we would appreciate your help in making extra copies as needed.

Enclosed please find a self addressed postage paid envelope, a survey for you and surveys for all the students enrolled in your Voc. Ag. classes. We appreciate your patience and your cooperation and hope that our study will be able to provide some useful information for your program.

Please return the enclosed surveys by Mar. 6th.

Thank You for you time !!!!!

Sincerely,

David R. Spotanski
Instructor
Agricultural Education

Dr. Rick Foster
Associate Professor
Agricultural Education

Survey #_____

AGRIBUSINESS COMPETENCY SURVEY
Vocational Agriculture Instructors

Thank you for taking the time to assist us in gathering information on employment opportunities and requirements for employment in Nebraska agribusinesses.

This survey is divided into three parts:

PART I: Includes some general questions about your vocational agriculture department and your community.

PART II: Contains a list of job skills which are to be rated according to your opinion as to their importance for employment in an agribusiness

Part III: Do you feel that you are qualified to teach these skills?

PART I:

1. How many years have you taught Vocational Agriculture?
   _____1-3 years _____4-6 years ____7-10 years ____10 + years

2. What is the population of your community
   ____less than 500 ____500-1000 ____1000-2000
   ____2000-5000 ____more than 5,000

3. What is your total Jr. High and High School enrollment?
   ____less than 100 ____100-300 ____300-600 ____600-1000
   ____over 1000 students

4. Please estimate the number of Agribusinesses in your community which could hire up to 10 employees and could serve as an employment site for your students.

   (Examples of each have been provided.)

   a)____ Production Agriculture (farm or ranch)
   b)____ Agricultural Supplies (hardware and retail store)
   c)____ Agricultural Sales and Service (service station, grain elevator, implement dealer)
   d)____ Agricultural Finance (bank, credit unions, PCA, farm financial consultants)
   e)____ Agricultural Mechanics (welding, machinery repair and maintenance, electrician, construction, etc. (This section does not include manufacturing.)
   f)____ Manufacturing (meat processing, food processing, machine manufacturing)
   g)____ Horticulture (lawn and garden care, floriculture, landscaping service, greenhouse, etc.)

5. What is your total enrollment in all you Voc. Ag. classes
   ____1-15 ____16-30 ____31-45 ____46-60 ____61 or more

6. Do you currently teach Agribusiness skills in your classes?
____yes ____no

7. If you answered yes to question #6, about how much time during the school year do you teach Agribusiness skills.
____less than 3 weeks ____3-9 weeks
____1 semester ____1 year

8. Do you have a copy of the MAVCC Agribusiness core
____yes ____no

9. If you answered yes to question #7. How often do you use the core in your instruction on Agribusiness.
____0% ____25% ____50% ____100%

10. If you answered yes to question #8. How would you rate the usefulness of the MAVCC Agribusiness core used in Nebraska for your instruction.
____ 1. excellent material
____ 2. good material for teaching directly to students
____ 3. good reference material
____ 4. ok, for some units but not for all
____ 5. worthless
____ 6. I don't know, I never use it

PART II: In this section, skills are identified that may be important to prepare students for employment in an agribusiness. Please rate the following based on your opinion, using the following scale.

1	2	3	4	5	6	7	8	9
Not Required		Seldom Required		Sometimes Required		Required		Always Required

Example: To what degree are the following skills required for a student to be employed on a dairy farm?

How to trim hooves	1	2	3	4	5	6	7	8	9
How to select good quality hay	1	2	3	4	5	6	7	8	9
Heat detection	1	2	3	4	5	6	7	8	9
Good sanitation skills	1	2	3	4	5	6	7	8	9
Mastitis detection and treatment	1	2	3	4	5	6	7	8	9

1	2	3	4	5	6	7	8	9
Not Required		Seldom Required		Sometimes Required		Required		Always Required

This section contains a list of skills which may be important employment skills for an agribusiness. Please rate each skill using the rating scale above.

1. To what degree are the following job skills required for a student to obtain employment in an agribusiness?

Good interviewing techniques	1	2	3	4	5	6	7	8	9
Writing a resume	1	2	3	4	5	6	7	8	9
Writing a letter of application	1	2	3	4	5	6	7	8	9
Completing an employment application	1	2	3	4	5	6	7	8	9
Obtaining a social security card	1	2	3	4	5	6	7	8	9
Determining take home pay	1	2	3	4	5	6	7	8	9

2. To what degree are the following <u>business skills</u> required for employment in an agribusiness?

Check daily cash balances	1	2	3	4	5	6	7	8	9
Count change	1	2	3	4	5	6	7	8	9
Balance cash register receipts	1	2	3	4	5	6	7	8	9
Figure sales tax	1	2	3	4	5	6	7	8	9
Calculate a profit and loss statement	1	2	3	4	5	6	7	8	9
Calculate percentages	1	2	3	4	5	6	7	8	9
Calculate discounts	1	2	3	4	5	6	7	8	9
Prepare a sales ticket	1	2	3	4	5	6	7	8	9
Accept credit cards and checks	1	2	3	4	5	6	7	8	9

1 Not Required	2	3 Seldom Required	4	5 Sometimes Required	6	7 Required	8	9 Always Required

Calculate interest 1 2 3 4 5 6 7 8 9

Order and receive merchandise 1 2 3 4 5 6 7 8 9

Complete a purchase order 1 2 3 4 5 6 7 8 9

Have computer word processing skills 1 2 3 4 5 6 7 8 9

Program a computer 1 2 3 4 5 6 7 8 9

3. To what degree are the following sales skills required for employment in an agribusiness?

Maintain inventory 1 2 3 4 5 6 7 8 9

Close a sale 1 2 3 4 5 6 7 8 9

Select advertising media 1 2 3 4 5 6 7 8 9

Plan and create a display 1 2 3 4 5 6 7 8 9

Prepare a newspaper advertisement 1 2 3 4 5 6 7 8 9

Determine stock turnover rates 1 2 3 4 5 6 7 8 9

Plan a floor layout 1 2 3 4 5 6 7 8 9

Have general product knowledge 1 2 3 4 5 6 7 8 9

4. To what degree are the following office equipment skills required for employment in an agribusiness?

Operate a microcomputer 1 2 3 4 5 6 7 8 9

Use the telephone properly 1 2 3 4 5 6 7 8 9

Use a cash register 1 2 3 4 5 6 7 8 9

Use an adding machine 1 2 3 4 5 6 7 8 9

Use the microfiche system 1 2 3 4 5 6 7 8 9

1 Not Required	2	3 Seldom Required	4	5 Sometimes Required	6	7 Required	8	9 Always Required

5. To what degree are the following communication skills required for employment in an agribusiness?

Ability to get along with people	1	2	3	4	5	6	7	8	9
Ability to speak to large groups	1	2	3	4	5	6	7	8	9
Ability to organize and present a demonstration	1	2	3	4	5	6	7	8	9
Ability to introduce yourself and others properly	1	2	3	4	5	6	7	8	9
Ability to talk to customers	1	2	3	4	5	6	7	8	9

6. To what degree are the following customer relations skills required for employment in an agribusiness?

Ability to recognize and help different varieties of customers	1	2	3	4	5	6	7	8	9
Ability to handle complaints and make adjustments	1	2	3	4	5	6	7	8	9
General product knowledge	1	2	3	4	5	6	7	8	9

Thank you for taking the time to help us identify important agribusiness job skills for our curriculum usage. Your cooperation is greatly appreciated.

*****Please enclose the completed survey in the postage paid envelope provided by Mar. 6, 1987.

Return to: David R. Spotanski
University of Nebraska
Agricultural Education
300 Ag Hall
Lincoln, NE 68583

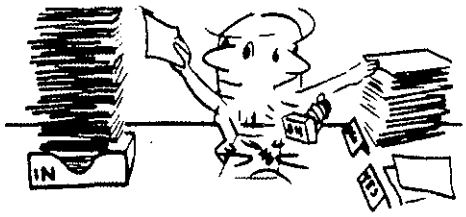
APPENDIX C

Follow-Up Letters to Nonrespondents

University of Nebraska Lincoln
Institute of Agriculture and Natural Resources

Agricultural Education Department
302 Agricultural Hall
East Campus
Lincoln, NE 68583-0709
Phone (402) 472-2807

March 20, 1987



Dear Agribusiness Personnel Director:

We need your Help!

The Department of Agricultural Education at the University of Nebraska is striving to improve and up-date their curriculum materials used to prepare high school students for employment in Nebraska agribusinesses.

In order to more effectively prepare students to meet these job requirements, we need your help to identify those areas which you consider to be required job skills for employment in your agribusiness.

Enclosed you will find a copy of the two-part survey which was sent to you March 3. Part One consists of some general questions about your business and Part Two consists of a list of various job skills to evaluate. Our goal is to determine what type of job skills are most required for employment in the agribusinesses of Nebraska.

We realize that some skills on the survey may not be appropriate for your business. However we would appreciate your response to each item on the questionnaire. Your response is very important. Without your assistance improvements cannot be made to accurately reflect the needs of Agribusiness.

Please return the questionnaire by this Friday, March 27, in the postage paid envelope provided.

Sincerely,

David R. Spotanski
Instructor

Dr. Rick Foster
Associate Professor

University of Nebraska Lincoln
Institute of Agriculture and Natural Resources

Agricultural Education Department
302 Agricultural Hall
East Campus
Lincoln, NE 68583-0709
Phone (402) 472-2807

March 20, 1987

Dear Vocational Agriculture Instructor:

We need your Help!

In order to accurately complete our study on Agribusiness competency skills we would appreciate your response and your student responses to the surveys sent out March 2nd.

Your cooperation is essential for the success of the study to determine a state wide view of the need for agribusiness curriculum.

Please return the surveys by Friday, March 27th so we can use them in determining future Vocational Agriculture curriculum.

Thank You for your time !

Sincerely,

David R. Spotanski
Instructor
Agricultural Education

Rick Foster
Associate Professor
Agricultural Education

P.S. If you have misplaced the surveys sent out to you please give us a call. 472-2807

University of Nebraska Lincoln
Institute of Agriculture and Natural Resources

128
Agricultural Education Department
302 Agricultural Hall
East Campus
Lincoln, NE 68583-0709
Phone (402) 472-2807

April 13, 1987

Thank you for agreeing to complete the enclosed Agribusiness survey. I have also enclosed a copy of the cover letter which was sent to you on March 20.

Please complete and return the enclosed survey by April 17 in the postage paid envelope provided .

Thank you for your time and cooperation.

Sincerely:

David R. Spotanski
Instructor

APPENDIX D

Code Sheets for Surveys

Agribusiness Manager Code Sheet
David Spotanski, Investigator
Department of Agricultural Education
March, 1987

Column	Item	Row
1	Respondent Group	1 = Teacher 2 = Ag Business
2	Ag Business Area	1 = Education 2 = Ag Prod 3 = Ag Supplies 4 = Ag Sales 5 = Finance 6 = Ag Mech 7 = Manufacture 8 = Hort
3,4	School District	01 - 36
5	Ag Business Area - Reported	1 = Ag Prod 2 = Ag Supplies 3 = Ag Sales 4 = Finance 5 = Ag Mech 6 = Manufacture 7 = Hort
6	Yrs in Business	1 = 1 - 3 yrs 2 = 4 - 6 yrs 3 = 7 - 9 yrs 4 =10 - 12 yrs 5 =13 - 15 yrs 6 =16 + yrs
7	Yrs in Current Position	1 = 1 - 3 yrs 2 = 4 - 6 yrs 3 = 7 - 9 yrs 4 = 10 - 12 yrs 5 = 13- 15 yrs 6 = 16 yrs +
8	Number employed	1 = less than 10 2 = 10 - 49 3 = 50 - 100 4 = 100 or more

9	Number hired per year	1 = none 2 = 1 - 2 3 = 3 - 4 4 = 5 - 6 5 = 7 or more
10	Hire H.S. Grads?	1 = Always 2 = Sometimes 3 = Seldom 4 = Never
11	Purpose of Vo Ag?	1 = Yes 2 = No
12	Require Vo Ag background?	1 = Always 2 = Sometimes 3 = Seldom 4 = Never
13	Require Postsecondary training?	1 = Always 2 = Sometimes 3 = Seldom 4 = Never
14	Rating of benefit of Vo Ag	1 = Essential 2 = Very Import 3 = Import but not req. 4 = Unimport 5 = No opinion
15	College graduate?	1 = Yes 2 = No
16	College field of study	1 = Agriculture 2 = Business 3 = Other 4 = No degree
17	Enrolled in Voc Ag	1 = Yes 2 = No
18,19,20	No employees in management	Actual
21,22,23	No employees in sales	Actual
24,25,26	No employees in office	Actual
27,28,29	No employees in stock/invent	Actual
30,31,32	No employees in repair/maint	Actual

33,34,35	No employees in production	Actual
36,37,38	General labor	Actual

Requirements for Employment

Skills to obtain employment

39	Interviewing techniques	Actual
40	Resume	Actual
41	Letter of application	Actual
42	Employment application	Actual
43	Obtaining S.S. card	Actual
44	Take home pay	Actual

Business Skills

45	Check cash balances	Actual
46	Count change	Actual
47	Balance cash register	Actual
48	Figure sales tax	Actual
49	Calculate profit/loss	Actual
50	Calculate percentages	Actual
51	Calculate discounts	Actual
52	Prepare sales ticket	Actual
53	Accept credit cards/checks	Actual
54	Calculate interest	Actual
55	Order/receive merchandise	Actual
56	Complete purchase order	Actual
57	Computer/word proc skills	Actual
58	Program a computer	Actual

Sales Skills		
59	Maintain inventory	Actual
60	Close a Sale	Actual
61	Select advertising media	Actual
62	Plan/create a display	Actual
63	Prepare newspaper ad	Actual
64	Determine stock turnover	Actual
65	Plan a floor layout	Actual
66	Have product knowledge	Actual
Office Equipment Skills		
67	Operate computer	Actual
68	Use telephone	Actual
69	Use cash register	Actual
70	Use adding machine	Actual
71	Use microfiche	Actual
Communication Skills		
72	Get along w/ people	Actual
73	Speak to large groups	Actual
74	Organize and present a demo	Actual
75	Introduce yourself and others	Actual
76	Talk to customers	Actual
Customer Relation Skills		
77	Recognize/help customers	Actual
78	Handle complaints	Actual
79	Product knowledge	Actual

Vocational Agriculture Instructor Code Sheet
David Spotanski, Investigator
Department of Agricultural Education
March, 1987

Column	Item	Row
1	Respondent Group	1 = Teacher 2 = Ag Business
2	Ag Business Area	1 = Education 2 = Ag Prod 3 = Ag Supplies 4 = Ag Sales 5 = Finance 6 = Ag Mech 7 = Manufacture 8 = Hort
3,4	School District	01 - 36
5	Yrs in teaching	1 = 1 - 3 yrs 2 = 4 - 6 yrs 3 = 7 - 10 yrs 4 = 11 +
6	Population - community	1 = < 500 2 = 500 - 1000 3 = 1000 - 2000 4 = 2000 - 5000 5 = > 5000
7	Total enrollment (Jr High/Sr)	1 = < 100 2 = 100 - 300 3 = 300 - 600 4 = 600 - 1000 5 = > 6000
Number of Businesses in the Community		
8,9	Prod Agriculture	Actual
10,11	Ag Supplies	Actual
12,13	Ag Sales & Service	Actual
14,15	Ag Finance	Actual
16,17	Ag Mechanics	Actual

18,19	Manufacturing	Actual
20, 21	Horticulture	Actual
22	Number in vo ag classes	1 = 1 - 15 2 = 16 - 30 3 = 31 - 45 4 = 46 - 60 5 = > 61
23	Currently teach agribusiness	1 = Yes 2 = No
24	How much time in teaching	1 = Do not teach 2 = < 3 wks 3 = 3 - 9 wks 4 = 1 semester 5 = 1 year
25	Copy of MAVCC Core?	1 = Yes 2 = No
26	Do you use the core?	1 = 0 % 2 = 25 % 3 = 50 % 4 = 100 %
27	Usefulness of core?	1 = Excellent 2 = Good material 3 = Good reference 4 = OK 5 = Worthless 6 = Don't use it

Requirements for Employment

Skills to obtain employment

28	Interviewing techniques	Actual
29	Resume	Actual
30	Letter of application	Actual
31	Employment application	Actual
32	Obtaining S.S. card	Actual
33	Take home pay	Actual

Business Skills

34	Check cash balances	Actual
35	Count change	Actual
36	Balance cash register	Actual
37	Figure sales tax	Actual
38	Calculate profit/loss	Actual
39	Calculate percentages	Actual
40	Calculate discounts	Actual
41	Prepare sales ticket	Actual
42	Accept credit cards/checks	Actual
43	Calculate interest	Actual
44	Order/receive merchandise	Actual
45	Complete purchase order	Actual
46	Computer/word proc. skills	Actual
47	Program a computer	Actual

Sales Skills

48	Maintain inventory	Actual
49	Close a sale	Actual
50	Select advertising media	Actual
51	Plan/create a display	Actual
52	Prepare newspaper ad	Actual
53	Determine stock turnover	Actual
54	Plan a floor layout	Actual
55	Have product knowledge	Actual

Office Equipment Skills		
56	Operate computer	Actual
57	Use telephone	Actual
58	Use cash register	Actual
59	Use adding machine	Actual
60	Use microfiche	Actual
Communication Skills		
61	Get along w/ people	Actual
62	Speak to large groups	Actual
63	Organize and present a demo	Actual
64	Introduce yourself and others	Actual
65	Talk to customers	Actual
Customer Relation Skills		
66	Recognize/help customers	Actual
67	Handle complaints	Actual
68	Product knowledge	Actual

THE UNIVERSITY OF CONNECTICUT

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Adult/Human Resources Education
Educational Administration
Higher Education Administration
Vocational — Technical Education
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August 4, 1987

Professor Richard M. Foster
Mr. David R. Spotanski
Agricultural Education
University of Nebraska
Lincoln, NE 68583-0709

Dear Richard and David:

Congratulations! The paper that you submitted for consideration as a part of the Fourteenth Annual National Agricultural Education Research Meeting entitled:
"Skills Required by Secondary Vocational Agriculture..."
has been selected for presentation at the meeting. Your paper was selected from among 91 proposals; only 36 were chosen, so it is a distinct honor to be on the program.

Enclosed is the preliminary copy of the program which I have forwarded to the AVA Agricultural Education Program Chairman. If errors are determined, please contact me immediately.

For the presentation, plan on a maximum of 15 minutes for your paper. There will be two other presenters and a discussant during your session. A podium, overhead projector, and screen will be furnished. You should arrange for any other equipment needed for your presentation. Be sure all audio-visuals can be seen and heard at the back of a room seating around 100 people.

Please send THREE copies of your paper to me by SEPTEMBER 4, 1987, so that I can share them with the discussant for the session. One copy that you send must be in camera-ready form following the guidelines of the attached sheet. The conference proceedings will be printed prior to the conference. IF YOUR PAPER IS NOT RECEIVED BY THE ABOVE DATE, IT WILL BE OMITTED FROM THE PROGRAM AND AN ALTERNATE PAPER SELECTED FOR PRESENTATION. Current plans are to also have the proceedings published in ERIC. If you object to having your paper published in ERIC, please notify me prior to September 4.

Your interest and efforts in preparing a paper are appreciated. We hope this will be a rewarding experience for you. We are on a tight publishing deadline, so please make every effort to comply with the dates specified. Please call me immediately if for any reason you cannot attend to present your paper.

Sincerely,

Alfred J. Mannebach

Alfred J. Mannebach
Program Chairman
1987 NAERM

enclosures